System and Method for Prescription Drug Authorization Information

Provisional Patent Application
System and Method for Drug Authorization Information

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Prior Art.

US Patent Documents

<table>
<thead>
<tr>
<th>Patent Number</th>
<th>Date</th>
<th>Inventor(s)</th>
<th>Assignee(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>US 6088677</td>
<td>May, 1997</td>
<td>Loren J. Spurgeon</td>
<td>705/4 and others</td>
</tr>
<tr>
<td>US 20030139945</td>
<td>Jan., 2002</td>
<td>Kenneth Brown et al.</td>
<td>705/2 and others</td>
</tr>
<tr>
<td>US 2004006490</td>
<td>Jul., 2002</td>
<td>Mark Gingrich et al.</td>
<td>705/2 and others</td>
</tr>
<tr>
<td>US 20060116907</td>
<td>Nov., 2004</td>
<td>Neal Rhodes et al.</td>
<td>705/2 and others</td>
</tr>
<tr>
<td>US 20090024412</td>
<td>Jun., 2007</td>
<td>Mark Medvitz et al.</td>
<td>705/2 and others</td>
</tr>
<tr>
<td>US 2008025959</td>
<td>Jan., 2008</td>
<td>Ronald Keith McKenzie et al.</td>
<td>705/3 and others</td>
</tr>
<tr>
<td>US 2010282689</td>
<td>May, 2010</td>
<td>Minalkumar Patel et al.</td>
<td>705/3 and others</td>
</tr>
<tr>
<td>US 20130096938</td>
<td>Oct., 2011</td>
<td>Peter Carl Stueckemann et al.</td>
<td>705/2 and others</td>
</tr>
</tbody>
</table>

Advantages.

Various aspects of the system and method for prescription drug authorization information may have one or more of the following advantages:

- Provide a more universal prescription drug authorization information product and/or service within and across providers, organizations, industries, & healthcare environment
- Provide a more automated and up-to-date product and/or service providing authorization information independently obtained and displayed based on prescription drug, payer, insurance company, plan, and geographic location
- Provide a more complete, end-to-end authorization information offering from prior authorization criteria and forms to authorization appeals and reconsideration documentation
- Provide a more integrated and all-inclusive approach for accessing authorization information, policies, criteria, preferred drug lists, formularies, etc. from multiple sources
- Provide a more interactive, dynamic, and multi-platform system that learns and enhances its utility based on user inputs, data, and information
- Provide a more active environment of information contributions by system and user verification of prescription drug authorization information

Drawings.

FIG. 1 illustrates an exemplary digital prescription drug network environment using authorization information features;
FIG. 2 is a block diagram of an exemplary system and method for prescription drug authorization information;
FIG. 3 is a block diagram of exemplary system components to peruse terms of use, view authorization information, and access change log, to name a few;
FIG. 3A is an exemplary screen shot of an about page with links to view prescription drug authorization information and access the change log, to name a few;
FIG. 4 is an exemplary screen shot to view prescription drug authorization information displayed and filtered by selected prescription drugs, insurance companies (payers and plans), and states;
FIG. 4A is an exemplary screen shot of the hierarchical table view of the prescription drug authorization information from prescription drug, insurance company (payer and plan), and state along with phone/fax, source webpages, and any additional submission instructions;
FIG. 5 is an exemplary screen shot of the change log highlighting updates to prescription drug authorization information over time and filterable by payer, prescription drug, and/or state;
FIG. 6 is a block diagram of the recurring update system that obtains the latest information from publicly available sources, updates the change log, and verifies the information automatically and/or manually.

Detailed Description.

The inventors listed invented system and method for prescription drug authorization information using data mining and visualization techniques and algorithms such as natural language processing, recommender systems, and machine learning, to name a few. Prescription drug authorization information can be defined as, but not limited to, displaying prior authorization forms, prior authorization drug lists, formulary exception medication requests, preferred drug lists, formularies, appeals and reconsideration forms, coverage determination, authorization policy and criteria, etc. based on a select of prescription drugs, insurance companies (payers and plans), and states. Relevant prior art includes a system and method that approves prior authorization requests and another system which facilitates the exchange of prescription data. Primary differentiators of this invention are that it is automated to maintain up-to-date information with little to no intervention and is independent of any specific party, serving as an accurate and impartial reference to the latest details available for prescription drug authorization information. As a result, system and method for prescription drug authorization information 130 provides a healthcare industry-wide resource of mined information from many insurance companies and prescription drug products. This invention also offers a more end-to-end authorization experience from prior authorization to reconsideration and appeal if necessary, to name a few, enabling users 101 to view authorization information 206, members 101A and providers 101B to contribute information and access filterable and searchable change logs 208 since their last visit, and viewers 101C to view read-only information and/or join the mailing list 350. Prescription drug authorization information table 410 displays a hierarchy of information by prescription drug, insurance company (payer), and state. Information displayed can be filtered by selecting from a panel of filters 408 or searching and adding 402. Payer names 413 and plan names 415 are clickable to redirect users 101 to the respective payers’ websites. Click on hyperlinks throughout each product table 412 and a new window or download will be performed with the requested information. Comments 409 can be added by users 101 and system moderated for more prescription drug authorization specific information, experience, and/or advice.
The system and method 130 may host a website that allows one or more users 101, e.g., the provider users 101B to optionally communicate with member users 101A for prescription drug authorization 130 and all users 101 access to prescription drug authorization information, at one or more user devices 110 via a communications network 120 to the website. User devices 110 include a computer terminal, a laptop, a personal digital assistant (PDA), a wireless telephone, a smart phone, a smart phone application, a smart speaker, IoT device, and/or the like. Communications network 120 includes a local area network (LAN), a wide area network (WAN), a wireless network, a cellular network, an intranet, an internet, and/or the like.

Terms of use 202 are accessible via a terms of use link 306. The terms of use 202 apply to all visitors, users, and others who access the service. Non-registered visitors 102 may view prescription drug authorization information 206 as well as join the mailing list 350. Non-registered visitors 102 are given read-only access to view prescription drug authorization information 206, join the mailing list 350, share pages via LinkedIn 355, and/or view terms of use 365 until they join. Users 101 unable to login may use forgot password functionality. Users 101 may login by entering required login information 504, such as registered email address and password. Once logged in, users 101 can access their member resources 208 such as saved prescription drug authorization information and change log preferences and filters. Alternative ways to add additional authorization information may be integration with Electrical Medical Record systems, insurance company resources, and/or other company APIs. Contributions, verifications, and/or accuracy of information by users 101 can also be incentivized using payment systems, blockchain technologies, and/or other company APIs. System updates 210 can be performed on a routine, scheduled basis and/or initiated manually and on-demand. System activity is stored in several databases, schemas, and tables referred to as a resource database 212.

<table>
<thead>
<tr>
<th>Brand Name</th>
<th>Generic Name</th>
<th>HCPCS Code</th>
<th>CPT Code(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synagis</td>
<td>Palivizumab</td>
<td>S9562</td>
<td>90378</td>
</tr>
<tr>
<td>Xolair</td>
<td>Omalizumab</td>
<td>J2357</td>
<td>96372, 96401</td>
</tr>
<tr>
<td>Krystexxa</td>
<td>Pegloticase</td>
<td>J2507</td>
<td>96365, +96366, 96413, +96415, 99211 to 99215, 96360 to 96361</td>
</tr>
<tr>
<td>Grastek</td>
<td>(Timothy) Grass Pollen Allergen (Extract)</td>
<td>NULL</td>
<td>95199</td>
</tr>
<tr>
<td>All Products</td>
<td>All Products</td>
<td>NULL</td>
<td>NULL</td>
</tr>
<tr>
<td>Humira</td>
<td>Adalimumab</td>
<td>J0135</td>
<td>NULL</td>
</tr>
</tbody>
</table>

Table 1: prescription drug information retrieved by brand name, generic name, HCPCS code, CPT codes, and/or the like; note this information and codes may change. Information may be specific to a single prescription drug, class of drugs, and/or all products for a payer, payer state, and/or payer state plan

The web page to view prescription drug authorization information 400 consists of a few sections. Along the top, a navigation bar 310 is available to navigate between internal pages. External links to social media 302 are available on the webpage. Also along the top right, non-registered visitors 102 can enter their email address to join the mailing list. Above terms of use 306 information at the bottom of the page, there is a comments box 409 specific to the current prescription drug, payer, and state selected 408. Along
the right side, multi-select filter options 408 are available to filter information displayed in the prescription drug authorization information table 410. Along the top, auto-complete textbox searches 402 are available to add filters as well. In this exemplary screen shot Figure 4A, there are separate tables 412 by product, separate rows either by payer 413 or by state 414, and separate rows by plan 415 underneath the payer of the plan(s). Information relevant to the currently selected filters is retrieved from the resource database 212 which is enhanced and maintained by system updates 210. Table 1 below shows hierarchical structure of the prescription drug authorization information. Note that there may be multiple instances accessible within each of these levels depending on the system state and filter selections.

<table>
<thead>
<tr>
<th>Reference Identifier</th>
<th>Hierarchy Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>412</td>
<td>Prescription Drug</td>
</tr>
<tr>
<td>413</td>
<td>Payer</td>
</tr>
<tr>
<td>414</td>
<td>State</td>
</tr>
<tr>
<td>415</td>
<td>Plan</td>
</tr>
</tbody>
</table>

Table 2: hierarchical structure of prescription drug authorization information

In order to see which prescription drugs require authorization, check to see if there is a drug specific or general authorization form in the desired product table 412. In addition to authorization forms, specific submission instructions may be listed in the steps column 416 which also may provide information on authorization details. Users 101 can also click on the hyperlinks for other forms (such as formulary, preferred drug lists, etc.) or other webpages (such as payer’s pharmacy page specific to the selected state, formulary search, etc.) to obtain additional information. Finally, contact information such as phone and fax is often displayed in the table, within attached forms, or available at the payer’s hyperlinked site.

<table>
<thead>
<tr>
<th>State</th>
<th>Payer</th>
<th>Synagis Form</th>
<th>Other Forms</th>
<th>Synagis URL</th>
<th>Other URLs</th>
<th>Fax</th>
<th>Phone</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND</td>
<td>Blue Cross Blue Shield</td>
<td>Synagis Form</td>
<td>&gt; Pre-determination Request Form. &gt; Appeals Form.</td>
<td>&gt; Synagis Page.</td>
<td>&gt; Prior Auth Page.</td>
<td>1-866-278-6634</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>Blue Cross Blue Shield - Commercial Formulary</td>
<td>Synagis Form</td>
<td>&gt; Synagis Form.</td>
<td>&gt; Formulary</td>
<td>&gt; Prior Auth Page.</td>
<td>1-866-278-6634</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
By default, all blog posts are sorted by publish date ascending and limited to 10 articles to display. Articles may be filtered via the filtering drop-down, sorted via the sorting drop-down, and limited via the results per page drop-down in section 532. Search for an article using the search functionality 538 by selecting the search criteria and typing the keyword to search. Each article has its own section of information and statistics 540 displaying article name, image, author, publish date, and description in section 544. Users 101, member 101A and provider 101B may publish articles as well as comment on articles 409 while viewers 101C may read-only. To read an article, click on the hyperlinked article name 539. To comment on an article, click on the article thumbnail 536 and access the specific page for selected article 540. On this page, notice that the filtering drop-down in section 532 displays “selected” to notify that a specific post has been selected. As a result, you can then find statistics, information, and comments 409 specific to the blog post selected.

There are many alternative ways that system and method for prescription drug authorization information can be implemented:

- Additional required and optional fields can be added to contribute authorization information
- Non-users can register automatically without having to apply
- Non-users can login using their social media accounts via integrations such as Sign in with LinkedIn, Facebook Connect, and/or the like
- Additional authorization information can be displayed and in more places throughout the system
- System updates can be based on alternative data using existing and/or additional sources
- Prescription drug authorization information table can be reorganized and/or based on additional and/or alternative information
- Filtering and sorting can be based on alternative calculations using existing and/or additional metrics; for example, more detailed geographic information such as country, CBSA, city, and/or the like
- Additional search criteria can be added to the search functionality
- Additional filtering criteria can be added to the filtering functionality
- Additional social networks and/or technologies can be integrated and connected
- Information can be further customized by soliciting user input and/or retrieving information from one or more other sources containing such information
- More prescription drugs, payers, plans, rest of world (e.g. Non-US) geographies, and authorization information from additional sites can be added
- Information can be refreshed more or less frequently and/or more or less changes can be published to the change logs
- Additional information and sources can be added on a continuous basis by users, inventors, and/or others associated with this invention
- Users can view percentage confidence of the authorization information and last updated date accuracy, percentage of reliability from contributing sources of such information, and/or percentage likelihood of an authorization acceptance based on information provided
- Provider users can filter and/or sort how the member users view the information and vice versa
- Eligibility can be defined based on provider notes and/or member inputs, previous postings, and/or the like to permit and/or prevent prescription drug eligibility and/or authorization
- Additional required and optional fields can be added to contribute information
- Users can be alerted when new information is submitted, modified, and/or the like
- Information can be limited to user preferred media/audiences or expanded beyond existing sites to any digital content and/or the like
- Users can connect within and across industries, companies, etc. for other opportunities such as jobs, internships, mentoring, etc.
- Users can submit questions via text message, smartphone app, email, and/or other messaging channel and they will be responded to by an automated question and answering service, chatbot, rule or corpus-based conversational model, by a system moderator, and/or directed to appropriate industry, company, etc. experts to answer, using same or different messaging channel from how the question was submitted
- Questions and/or communications submitted via Facebook, Twitter, and/or other social media networks can be directed to users and/or the appropriate industry, company, etc. experts for comment and follow-up
- Additional machine learning, natural language processing, other automated techniques, and/or the like can be leveraged to further enhance the system and method
- Additional techniques can be incorporated for selecting similar prescription drugs, authorizations, and/or the like
- Users can find other users that are in their industry, company, geographical area, etc. and/or share similar interests or needs
- Users can save specific authorization information and/or filters locally and/or other media
- Users can view their resources, save information, and/or receive information to a profile page specific for each user
- Electronic Medical Record (EMR) systems, Electronic Health Records (EHR), hospital systems, and/or the like can be integrated to further enhance the end to end experience from prior authorization to appeals for example
- Alternative ways to add additional authorization information may be integrated with EMR and EHR systems, insurance company resources, and/or other company APIs
- Contributions, verifications, and/or accuracy of information can also be incentivized using payment systems, blockchain technologies, other company APIs, and/or technologies
System and Method for Prescription Drug Authorization Information

- System activity can be stored and secured in additional databases, schemas, and/or the like tables and/or other storage systems, such as server less technologies, cloud-based, and/or the like and secured using additional cryptography, security technologies and algorithms, and/or the like
- Workday integration to allow users to connect through Workday, streamline health goals and objectives information, and share/receive information
- Ability to virtually shadow users to experience the authorization process from users or from other sources containing such information
- Since the invention spans across industries, companies, etc., it may offer features similar to an umbrella or parent organization; for example, summer weekly internship fellows (SWIFs) that intern at various companies but are members of this invention’s community
- Like users can receive notifications about each other in the community and are given the opportunity to gift resources and/or comment/message with other users
- Messaging between users online and offline
- Integration of other healthcare related and/or prescription drug information externally sourced and incorporated into the system and method
- External articles and resources visualized, grouped together, and filterable for relevant prescription drugs
- Additional instructional content, video, publications, blogs, etc. can be produced and displayed about this invention, inventors, and/or others associated with this invention
- Algorithms, clustering techniques, machine learning, etc. may be modified and enhanced
- Blog posts, articles, publications, and/or the like added generally or specifically to a prescription drug, company, industry, etc. can be added and accessible in alternative ways using filtering and visualizations
- Functionality to schedule time with others can be incorporated
- Highlight companies, healthcare providers, members, etc. considered the top or best in category, contributions, and/or the like
- Detection that information and/or forms have been modified using dates, form and/or revision identifiers, machine learning, natural language processing, distance metrics, and/or the like

In summary, system and method 130 of this invention provide a more complete, end-to-end prescription drug authorization information experience enabling users 101 to obtain up-to-date information from frequently changing and publicly available data sources as well as additional information from users in form of comments 409, submission instructions, relevant forms and webpages, etc. Other alternative ways this invention could be implemented may involve additional functionality, machine learning, natural language processing, speech recognition, algorithms, security, storage, data, and benefits to support the advantages and claims of this invention.

While the invention has been illustrated and described in detail in the drawings and foregoing description, the same is to be considered as illustrative and not restrictive in character, it being understood that only the preferred embodiment has been shown and described and that all equivalents, changes, and modifications that come within the spirit of the inventions as described herein are desired to be protected.
System and Method of Prescription Drug Authorization Information

Registered Member 101A

Registered Provider 101B

Registered Viewer 101C

User Device 110

Communications Network 120

System and Method of Prescription Drug Authorization Information 130

Prescription Drug Authorization Information 135

Audience 140

Non-Registered Visitor 102
System and Method of Prescription Drug Authorization Information

- View Terms of Use 202
- View Authorization Information 206
- System Updates 210
- Apply and Register 204
- Change Log 208
- Resource Database 212
System and Method of Prescription Drug Authorization Information

330

FIG. 3A

320

Join Mailing List

350

View Authorization Information

310

Change Log

302

Access Social Media Pages

360

FIG. 4

365

View Terms of Use

355

Share on LinkedIn

365
About Page

Payer Grid provides authorization information by prescription drug, insurance company (payer and plan), and/or state. Links to webpages and forms are displayed along with phone/fax and the date when documents were last modified so users can be sure that it is the most up-to-date. Certain submission instructions are also provided based on authorization information from the source payer site.

'Logic will get you from A to B. Imagination will take you everywhere.' (Albert Einstein)
System and Method of Prescription Drug Authorization Information

<table>
<thead>
<tr>
<th>State</th>
<th>Payer</th>
<th>Synagis Form</th>
<th>Other Forms</th>
<th>Synagis URL</th>
<th>Other URLS</th>
<th>Fax</th>
<th>Phone</th>
<th>Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA</td>
<td>Capital Blue Cross Blue Shield</td>
<td>&gt; Prior Auth Form</td>
<td>&gt; Prior Auth Drug List</td>
<td>&gt; Prior Auth Drug List</td>
<td>&gt; Pharmacy Page</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PA</td>
<td>Capital Blue Cross Blue Shield</td>
<td>&gt; Synagis Request Form (1/17)</td>
<td>&gt; Synagis Statement of Medical Necessity</td>
<td>&gt; Provider Page</td>
<td>1-866-805-4150</td>
<td>1-800-906-7796</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| MN    | Minnesota Blue Cross Blue Shield | > Appeals Form (4/1/11) | > Forms Page | > Provider Page | 1) Providers can submit an electronic drug PA request online via the CoverMyMeds free web portal (for Prime Therapeutics to review) or online via the Blue Cross Pharmacy portal.  
2) Transmission via HCPDP file using an integrated Electronic Medical Record (EMR) system.  
To learn how to do this, providers should contact their EMR vendor |       |       |       |
| MN    | Minnesota Blue Cross Blue Shield - Commercial | > Prior Auth Drug List | > Provider Page |       |       |       |       |
| MN    | Minnesota Blue Cross Blue Shield - Government Programs and Blue Plus Blue Advantage | > Prior Auth Drug List | > Provider Page |       |       |       |       |

<table>
<thead>
<tr>
<th>State</th>
<th>Xolair Form</th>
<th>Other Forms</th>
<th>Xolair URL</th>
<th>Other URLS</th>
<th>Fax</th>
<th>Phone</th>
<th>Steps</th>
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<tbody>
<tr>
<td>CA</td>
<td>Xolair Form</td>
<td>&gt; Prior Auth Form</td>
<td>&gt; Prior Auth Drug List</td>
<td>&gt; Prior Auth Drug List</td>
<td>&gt; Pharmacy Page</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1) Effective January 1, 2018, Merck is the new pharmacy benefit manager for CalOptima. Providers must use a new Prior Authorization (PA) Form.  
2) For more information about the CalOptima Pharmacy Program, please call Pharmacy Management at 1-714-245-5471.
System and Method of Prescription Drug Authorization Information

Change Log

January 2018
> 60 updated formularies (+ See Details)
> 37 updated prior authorization forms (+ See Details)
> 8 updated policy criteria (+ See Details)

December 2017
> 18 updated formularies (+ See Details)
> 18 updated prior authorization forms (+ See Details)
> 1 updated policy criteria

+ See More Changes

'A ship in port is safe, but that is not what ships are built for' (Grace Hopper)

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System and Method of Prescription Drug Authorization Information

Payer Grid
Change Log

Search for active articles: [Submit]
The positive thinker sees the invisible, feels the intangible, and achieves the impossible' (Winston Churchill)
System and Method of Prescription Drug Authorization Information

Update System

210

Info up-to-date? Date match?

no

Update Change Log

604

Obtain Latest Information

602

yes

Update Change Log

606

Info verified?

no

Auto or Manual Verification

610

608

yes