"System and Method of Pharmaceutical Prescription and Distribution

Field of the Invention

The present invention relates to a system and method of pharmaceutical prescription and distribution, particularly, by the use of electronic means, such as the Internet. The invention also relates to a method of medication management for patients, particularly chronic-care patients.

Background Art

The following discussion of the background to the invention is intended to facilitate an understanding of the invention. However, it should be appreciated that the discussion is not an acknowledgement or admission that any of the material referred to was published, known or part of the common general knowledge of the person skilled in the art in any jurisdiction as at the priority date of the application.

At present, when a patient consults a medical practitioner regarding a health problem, medication may be prescribed. The script (or prescription) which the medical practitioner uses to prescribe the medication is typically a handwritten or printed-paper document.

In order to receive the medication, the patient takes the hard-copy script to a pharmacy for dispensing. The problem here is that it is common for the pharmacy to be located remote to the medical practitioner's premises, for example, at a shopping mall.

Upon receiving the hard copy script, the pharmacy supplies the patient with the prescribed medication, and the patient pays for the medication at the pharmacy. The pharmacy is staffed by pharmacists who are trained, and licenced, to dispense pharmaceutical products including Pharmaceutical Benefits Scheme ("**PBS**") products, private prescription products and 'over the counter pharmacy' products.

A key disadvantage to the above system is that the use of hard-copy scripts presents a number of problems. Firstly, handwritten scripts can be extremely difficult to read and provides a risk of being misread by the pharmacist. If this occurs, it is quite possible for the wrong medication, or wrong dosage of the correct medication, to be dispensed to the patient. Secondly, the system is also difficult for the patient, who has to travel from the medical practitioner's premises to the pharmacy to collect the medication – particularly so if the patient is very unwell, lives in a remote area or is mobility impaired. Finally, the use of hard-copy scripts requires the effective handling and safekeeping of hard-copy scripts in order to ensure the supply of, and government payment for, PBS prescription pharmaceuticals. This is a key concern of chronic-care patients who have to keep repeat prescriptions for periods of time sometimes longer than a month in order to ensure the dispensing of repeat medication by the pharmacist.

Consequently, there is a need for a system and method of pharmaceutical prescription and distribution which eliminates or alleviates, at least in part, some or all of the above-mentioned problems. Ideally, the system and method:

- removes the need for patients to attend dispensing pharmacies in person to present hard-copy scripts and collect their dispensed prescriptions; and

- assists patients to manage their prescriptions and accordingly manage their disease state.

Disclosure of the Invention

Throughout the specification, unless the context requires otherwise, the word "comprise" or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated integer or group of integers but not the exclusion of any other integer or group of integers.

In accordance with a first aspect of the invention there is a system of pharmaceutical prescription and distribution comprising:

a patient;

a pharmaceutical dispenser;

a prescription facilitator in data and control communication with the pharmaceutical dispenser; and

at least one medical practitioner system in data communication with the prescription facilitator,

where, the medical practitioner system sends a set of predetermined information representing a prescription for the patient to the prescription facilitator, the prescription facilitator thereafter operating to confirm that the set of predetermined information is representative of a valid prescription and, if confirmed, sends the set of predetermined information to the pharmaceutical dispenser, along with an instruction to fulfil the prescription represented by the set of predetermined information.

Preferably, the pharmaceutical dispenser, medical practitioner system and prescription facilitator are all operable to produce an identical script from the set of predetermined information. More preferably, the set of predetermined information includes a first unique script number.

Ideally, the first unique script number is based on a unique medical provider number assigned to each medical practitioner system. Preferably, the prescription facilitator includes a database and confirmation that that the set of predetermined information is representative of a valid prescription includes determining the unique medical provider number from the first unique script number and checking the unique medical provider number against a set of unique medical provider numbers for the at least one medical practitioner system stored in the database.

Preferably, the prescription facilitator includes a database, and where the set of predetermined information includes details of the medical practitioner system's

location of practice and confirmation that the set of predetermined information is representative of a valid prescription includes checking details of the location of practice against a set of known practice locations for the at least one medical practitioner system stored in the database. More preferably, the set of predetermined information includes priority information, said priority information being used by the pharmaceutical dispenser to determine the order of fulfilment of prescriptions.

Preferably, the set of predetermined information includes details of the preferred delivery method of the prescribed medication, the pharmaceutical dispenser thereafter arranging for the prescribed medication to be delivered to the patient in accordance with the preferred delivery method. The preferred delivery method may be one of the following: courier; postal; counter pick-up.

Ideally, the set of predetermined information includes details of whether the prescription facilitator and/or pharmaceutical dispenser are authorised to contact the patient for whom the prescription is being fulfilled. Further, upon sending a set of predetermined information representing a prescription to the prescription facilitator, the medical practitioner system also generates a prescription receipt, the patient being required to present the prescription receipt to the pharmaceutical dispenser, or their authorised representative, upon taking delivery of the prescribed medication. The prescription receipt may include a barcode, the pharmaceutical dispenser operating to scan the barcode of the prescription receipt upon delivering the prescribed medication to the patient and thereby confirm delivery.

Preferably, upon sending the set of predetermined information representing a prescription to the prescription facilitator, the medical practitioner system also sends a communication to the patient. The communication may be one of the following: postal communication; e-mail; SMS message; telephone call.

Preferably, the prescription facilitator includes a script database, the prescription facilitator operable to amend the set of predetermined information to include a

second unique script number and to store the set of predetermined information in the database indexed according to the second unique script number.

More preferably, the prescription facilitator contains an inventory database containing information on medication available to be dispensed by the pharmaceutical dispenser and the medical practitioner system checks the inventory database to ensure that the medication to be prescribed is available to be dispensed by the pharmaceutical dispenser prior to communicating the set of predetermined information to the prescription facilitator.

Ideally, the prescription facilitator, medical professional system and pharmaceutical dispenser communicate through at least one of the following: wireless communication means; telephone network; data communication network; virtual private network. The communications between prescription facilitator, medical professional system and pharmaceutical dispenser may be encrypted. The set of predetermined information may also be digitally signed.

Preferably, the prescription facilitator is operable to allow a patient to access information relating to their prescriptions stored in the script database and pay for prescribed medication. More preferably, the prescription facilitator is in data communication with at least one financial institution with which the patient has an account, the prescription facilitator thereafter operable to debit the cost of the prescribed medication from the patient's account with the financial institution.

In accordance with a second aspect of the invention there is a prescription facilitator for a system of pharmaceutical prescription and distribution, comprising:

means for receiving a set of predetermined information representing a prescription for a patient from a medical practitioner system;

means for sending the set of predetermined information and an instruction to fulfil the prescription represented by the first set of predetermined information to a pharmaceutical dispenser,

where, the means for sending the set of predetermined information is activated only on confirming that the set of predetermined information is representative of a valid prescription.

Preferably, the prescription facilitator includes means for generating script from the set of predetermined information, the script being identical to the script able to be produced by the medical practitioner system from the first set of predetermined information.

More preferably, the prescription facilitator includes a medical provider number database, where, in confirming the set of predetermined information is representative of a valid prescription, the prescription facilitator determines a unique medical provider number from a first unique script number included in the set of predetermined information and checks the unique medical provider number against a set of unique medical provider numbers stored in the medical provider number database for the medical practitioner system.

The prescription facilitator may also include a practice location database, where, in confirming the set of predetermined information is representative of a valid prescription, the prescription facilitator checks the medical practitioner system's location of practice included in the set of predetermined information against a set of known practice locations for the medical practitioner system stored in the practice location database.

Preferably, the prescription facilitator also includes a script database; means for amending the set of predetermined information to include a second unique script number; and means to store the set of predetermined information in the database indexed according to the second unique script number.

More preferably, the prescription facilitator includes an inventory database containing information on medication available to be dispensed by the pharmaceutical dispenser, where, upon receipt of an inventory check communication from the medical practitioner system, the prescription facilitator checks the inventory status of the medication the subject of the request and

communicates to the medical practitioner system with the inventory status information for that medication.

The prescription facilitator may include means for encrypting and/or decrypting communications. It may also include means for verifying a digital signature. Yet further, the prescription facilitator may include means for receiving communications from a patient and providing information to the patient relating to their prescriptions stored in the script database in response to said communications.

Preferably, the prescription facilitator includes means for communicating with at least one financial institution with which a patient has an account, where, upon instructing the pharmaceutical dispenser to fulfil the prescription, the prescription facilitator operates to instruct the financial institution to debit the cost of the prescribed medication from the patient's account.

In accordance with a third aspect of the invention there is a method of pharmaceutical prescription and distribution including the steps of:

receiving a set of predetermined information representing a prescription for a patient from a medical practitioner system;

confirming that the set of predetermined information is representative of a valid prescription; and

if confirmed, sending the set of predetermined information to a pharmaceutical dispenser along with an instruction to fulfil the prescription represented by the set of predetermined information.

Preferably, the method also includes the step of generating a script from the set of predetermined information, said script identical to the script able to be generated by the medical practitioner system.

More preferably, the method also includes the step of determining a unique medical provider number from a first unique script number included in the set of predetermined information and where the step of confirming that the set of predetermined information is representative of a valid prescription includes the substep of checking the unique medical provider number against a set of unique medical provider numbers for the medical practitioner system stored in a medical provider number database.

More preferably, the method includes the step of confirming that the set of predetermined information is representative of a valid prescription includes the substep of checking details of the location of practice of the medical practitioner system included in the set of predetermined information against a set of known practice locations for the medical practitioner system stored in a practice location database.

The method may also include the steps of: amending the set of predetermined information to include a second unique script number; and storing the set of predetermined information in a script database indexed according to the second unique script number. The following steps may also be included: receiving an inventory status communication from the medical practitioner system; checking the inventory status information of the medication the subject of the inventory status request with an inventory database containing information as to the availability of medication available to be dispensed by the pharmaceutical dispenser; and communicating to the medical practitioner system the inventory status information for the medication the subject of the inventory status request.

Preferably, the method includes the steps of receiving communications from a patient and providing information to the patient relating to their prescriptions stored in the script database. More preferably, the method includes the steps of instructing a financial institution to debit the cost of prescribed medication from a patient's account held with the financial institution.

The medical professional system may be located at a GP surgery, and this would allow a GP to prescribe medication and generate an electronic script. This has

the advantage that the script can be sent to the pharmacy dispensing facility without the need for the patient to take it there themself.

The prescription facilitator and pharmaceutical dispenser may be co-located.

The processing means may be operable to scan a signature onto a generated script, and to enable the document to be printed by means of a printer coupled thereto. This means that the script can be sent to the pharmacy in a conventional hard-copy format.

The use of digital signatures and file encryption ensures that the information contained in the file is secure.

The system may further include a web server operable to provide Internet access to the processing means. This allows remote access to the processing means by, for example, customers, patients and GP's.

Government or private health insurance bodies may also be linked to the system by means of the further terminals.

According to another aspect of the present invention, there is provided a method of assisting a patient to manage pharmaceutical prescriptions, the method comprising the steps:

receiving prescriptions for the patient;

processing the prescriptions to generate a database of prescription information for the patient; and

monitoring the database of prescription information; and

providing the prescription information to the patient to assist the patient to manage the prescriptions.

Preferably, the prescription information provided to the patient comprises repeat prescription reminders via telephone call follow up, electronic mail and other electronic media including short message services ("SMS"). This may assist patient compliance. Preferably, the prescription information provided to the patient comprises reminding the patient to comply with prescribed dosages. This may further assist patient compliance. Preferably, the prescription information provided to the patient comprises payment information. This may assist the patient to selectively manage payments for private prescriptions, PBS prescriptions and prescriptions covered by private health insurance.

Brief Description of the Drawings

The invention will now be described, by way of example only, with reference to the accompanying drawings of which:

Figure 1 is a schematic illustration of the features of pharmaceutical prescription and dispensing management system;

Figure 2 is a schematic illustration of the operation of the management system of Figure 1;

Figure 3 is a flow diagram illustrating the prescription process of the present invention;

Figures 4A and 4B are flow diagrams illustrating the process carried out by the processing centre and the dispensing facility of the management system, upon receipt of an electronic script.

Best Mode(s) for Carrying Out the Invention

A pharmaceutical prescription and dispensing management system 100 (the "**management system**") is illustrated schematically in Figure 1, and comprises a number of parties in communication with each other to provide a means of managing the prescribing and dispensing medication to patients. The entities

include a medical practitioner, such as a general practitioner ("**GP**") 1, a processing centre 2, and a dispensing service 3.

The dispensing service 3 is linked to financial institutions, such as banks, 4 and to the Health Insurance Commission (HIC).

Figure 1 illustrates how these parties are linked to allow communication between them to provide for prescription, dispensing and delivery services.

The hub of the management system is the processing centre 2, which comprises a first server 5, a second server 6 with an associated database 7, a secure web server 8, and a telecommunications centre 9.

The GP 1 is provided with a computer 10 – such as a personal computer – provided with appropriate operating software, application software, including Practice Management and scripting applications, and communications software to allow the transfer of data between the computer and the processing centre 2. The communications software may be based, for example, on the TCP/IP protocol, and able to encrypt/decrypt communications in accordance with PKI standards. The computer 10 is connected to the first server 5 by a suitable communications link, for example using an Internet Service Provider ("**ISP**"). The link between computer 10 and first server 5 can be either a "Store & Forward" or a "Dynamic" link. Regardless, it is preferable for the link to be suitably configured to ensure a secure connection. Other suitable communications links can also be used.

The first server 5 is coupled to the second server 6 and its associated database 7. The secure web server 8 and the telecommunications centre 9 are also coupled to the second server 6.

The secure web server 8 allows Internet access, by remote users, to the processing centre 2.

The telecommunications centre 9 is a Call Centre that allows users of the management system 100, and particularly patients/ consumers, to contact operators to provide or receive information. The use and operation of Call Centres is well known, and, as such need not be described in any further details herein, except in so far as it is relevant to the present invention. Its use within the context of the present invention will be discussed in more detail below.

The processing centre 2 is linked to the dispensing service 3. The dispensing service 3 includes a computer 11, including appropriate operating and applications software (including communications software) to enable the transfer of data between the processing centre 2 and the dispensing service 3. As with the GP to processing link, this may be based, for example, on the TCP/IP protocol and able to encrypt/decrypt communications in accordance with PKI standards. The computer 11 is connected to the second server 6 by a suitable communications link. Ideally, the suitable communications link is identical, or substantially similar, to the communications link between computer 10 and first server 5.

The dispensing service 3 further includes a warehouse facility 12 - where pharmaceuticals are stored for distribution and delivery - and an accounting facility 13. Typically, the dispensing service 3 will be provided at a conventional pharmacy (although this need not necessarily be the case). The accounting facility 13 facilitates, and enables, the patient to pay for the medication prescribed. The accounting facility 13 is linked to one or more financial institutions 4. Patients can access these financial institutions 4 to pay for their medications, for example using electronic payment facilities such Direct Debit, B-Pay™ or credit cards.

The first, and second servers 5, 6, the associated database 7, the web server, 8, the telecommunications centre, 9, and the dispensing facility 3, can be appropriately linked depending on the physical arrangement of the system 100. For example, if they are all located at the same location, they could be linked by a Local Area Network. If the facilities are located at different locations, they

could be linked for example on a Wide Area Network using appropriate telecommunications links, via a secure Virtual Private Network (VPN).

The management system 100 will operate as follows:

Figure 2 illustrates the procedures and steps involved in prescribing, dispensing and delivering a pharmaceutical using the management system 100 of the present invention. Figure 3 is a flow chart of the steps involved in the prescribing of medication at the GP surgery.

When a patient attends a GP for a consultation, the patient may be prescribed medication. Where the patient has a chronic condition, the patient may not need to attend, but can telephone (or use email, for example) the GP surgery and request a repeat prescription.

The first step (301) is for the GP, or an employee of the GP, to check and update the patient's details, for example on a computer system provided in the surgery. This will be integrated with the GP's computer 10. The GP's computer 10 may be networked with the computer system, and the operating, applications and communications software referred to above will be available on the network. When the GP has decided what medication is to be prescribed, the GP updates the patient's medical records (302), and proceeds to generate a script using application software provided on the computer 10 – step 303. Any suitable scripting software can be used and can be included in known Practice Management applications such as Consult™ manufactured by Professional Practice and Medical Director™ manufactured by Health Communication Networks Pty Ltd.

The GP will enter details of the medication, details of the patient, as well as details of preferred delivery or pickup, and details of whether the patient has approved contact by the telecommunications centre 9. When the script is created a unique script number is generated based on the GP's unique provider number. This unique script number is assigned to that script. The script is then complete – step 304.

The patient has the choice to have the script produced as a conventional paper script, or as an electronic script that will be fulfilled using the management system 100 (step 305). If the patient chooses the first option, the script is printed (step 306), and the patient can then take the script to the pharmacy of their choice (step 307).

If the patient chooses the latter option, the computer 10 is operable – on the basis of the information supplied by the GP – to determine whether the drug can be supplied by the management system 100 (step 308). This is achieved by checking the drug prescribed against a database of drugs stored on the GP's computer 10. If the medication can be dispensed using the management system 100, the computer 10 proceeds to generate an electronic script. If it cannot be dispensed then a normal paper script is generated (step 309), and printed (step 310), for the patient to take to the pharmacy of their choice (step 311).

The electronic script is created (step 312) using the GP's Practice Management Software – using encryption where desired. As mentioned above, when the script is created a unique script number based on the GP's unique provider number will be created and assigned to the script. Once the electronic script has been created the scripting application will use the GP's own Digital Certificate (Private Key) to "sign" the script (step 313) before it is encrypted (step 315) with the management systems public key. The electronic, and digitally signed script is in the form of a data file (as is well known in the art), and includes in the header details of the GP's unique provider number, location ID as well as script number.

Once "signed" (but before encryption), the script is stored (step 314) in memory on the computer 10, for a predetermined period of time, for example, 30 minutes. This allows the GP time to update or cancel the script (step 316). When finalised, the script may be stored on the GP's computer 10. "Urgent" scripts can be flagged as a priority and immediately made ready for transmission to the processing centre 2.

When the electronic script is ready for transmission, the electronic script is encrypted with the management system's public key, by the communications software – step 315. The electronic script is then transmitted to the first server 5 in a manner well known to persons skilled in the art – step 317 – and an email may be generated for transmission to the patient as a further receipt (step 318).

At the same time as the electronic script is created, the computer 10 is operable, under control of the scripting software, to generate a script receipt which can then be printed and given to the patient (step 319). A patient account record can also be printed. This patient account is a record of this medical transaction between the GP and the patient. The script receipt may include a bar code printed thereon, which can be used by the delivery service 15 to scan as confirmation of receipt. The communications software can also include standard email facilities to allow the electronic script to be transmitted by email should the communication link to the first server 5 be compromised.

As mentioned above, the encrypted electronic script is sent to the first server 5 from the GP's computer 10. The first server 5 can use VPN technology, for example the Cisco VPN 5000™ server manufactured by Cisco Corporation.

The steps performed by the processing centre 2 upon receipt of the encrypted electronic script are set out in Figures 4A and 4B.

At step 401, the first server 5 receives the digitally signed and encrypted script, where it is decrypted using the management system's private key (step 402). The first server 5 is then operable to extract details of the unique provider number (step 403) and to check this against known provider numbers to confirm that the electronic script has come from a valid prescriber (step 404). If this is confirmed then the first server is operable to obtain the public key for that GP (step 405), to confirm the GP's digital signature (step 406). The use of private and public key encryption, and it's use in providing and confirming digital signatures is well known, and, as such, need not be described in any further detail herein. Issuance, maintenance and all administration of the public keys is

handled by an appropriate certifying and issuing authority, such as the Health Insurance Commission.

If at any point an error occurs in the process, then the first server 5 is operable to report the error. Such error is reported to the GP via a return electronic message which indicates the nature and type of error encountered. The GP may take action to correct this error prior to re-sending the script as described above.

Once the script has been decrypted, and the digital signature confirmed, it is transmitted to the second server 6. Upon receipt of the script, the second server 6 is operable to create a second, unique script identification number for the script for use as the primary identification number in the management system 100 (step 407), and to process the details from the script and store these details in the database 7 (step 408). The script details are then checked (step 409) against data validation rules internal to the management system 100 to maintain the integrity of the data stored in the management system. The second server 6 is then operable to check that the Location ID, the number which identifies the specific physical location from which the prescription originated, is valid (step 410). The unique provider number and the script number are also checked (steps 411, and 412).

Once all the details are validated, then the second server 6 is operable to create a script document 14, which is an identical reproduction of the script as if created and printed in the consulting rooms of the GP, for use by the dispensing service 3 (step 421). Once the script document 14 has been created then a scanned signature of the dispensing GP may be added (step 422). When the signed script document 14 is ready (step 423), then a hard-copy is printed by means of a printer (step 427), and can be forwarded to the dispensing service 3.

The second server 6 is also operable to generate a second electronic script from the script document 14. This is achieved in the same way as before, that is, the script is digitally signed – with the management systems private key – step 424, encrypted with the dispensing service public key (step 425), and transmitted to the dispensing service 3 (step 426). The transmission of the electronic script is

from the second server 6 to the dispensing service computer 11. The computer 11 is then operable to verify and decrypt the second electronic script using the management system public key and the dispensing service private key, in the same manner as before. This process is utilised when the hard-copy process, described above is not used.

The dispensing service 3 has a trained and licensed pharmacist who can then read either the hard-copy or the electronic copy of the script and proceed with the formal dispensing process – step 428. The electronic copy can be displayed on the screen of the computer 11, or can be printed off. The dispensing process is carried out in accordance with known dispensing procedures.

As mentioned above, the dispensing service includes a warehouse facility 12 where the medication is stored. The warehouse facility 12 may be provided at the same location as the pharmacist, or can be located elsewhere. For example, the pharmacist could be located at a conventional pharmacy, with the warehouse facility 12 being located in another area. If the warehouse facility is located remotely, then there is suitable communications links between the pharmacist and the warehouse to ensure that the information regarding the dispensed medication is sent to the warehouse to ensure that the correct medication is made available for the patient or that the medication required is made available to the pharmacy for picking and packing into the patient's specific medication delivery.

Once dispensed, the medication needs to be delivered to the patient. The medication can be delivered by a suitable delivery service 15, for example by courier or postal service. The delivery service 15 can be linked to the dispensing service 3 by any suitable communications link, for example by computer, or simply by telephone. When the delivery service 15 is advised that medication needs to be delivered to a patient, the delivery service picks up the medication from the warehouse facility 12 of the dispensing service 3, and delivers it to the patient 16. The patient 16 will sign a receipt, or, for example, the bar code mentioned above will be used.

As mentioned above, the second server 6 is linked to the telecommunications centre 9 and a secure web server 8.

A patient can call the telecommunications centre 9, for example, if they have a query regarding their script, their payment, or any other query. This can also be used if there are details missing from their script that need to be submitted before the medication can be dispensed – as has been discussed above. The telecommunications centre 9 is staffed by personnel who have access to the second server 6 via terminals provided at the telecommunications centre 9, thus allowing information stored at the associated database 7 to be accessed, and entered.

The secure web server 8 provides an interface for remote users of the management system 100 using the Internet. Remote users – which may be patients or general consumers – access the secure web server 8 using remote terminals, such as personal computers, via an ISP, as is well known in the art. The secure web server 8 provides a web site in the form of a multiplicity of web pages, which the user can read, and navigate by clicking on hyperlinks. Information can be input into the appropriate text boxes provided on the web pages, and the information being downloaded to the secure web server 8 (and the second server 6, where appropriate). The exchange of data over the Internet, in this management system, is carried out using well-known techniques, and, as such, need not be described in any further detail herein. Patients may be able to create new patient accounts and update patient specific data on patient records, and make payments for medications. Security to the site will be maintained via a secure communications link between the patient and the secure web server 8 that may be invoked after validating the authenticity of the patient via a patient specific user name and password utilising Secure Sockets Layer protocol.

General consumers (and patients) can also use the web site to order and purchase non-prescription medication and other items usually available from pharmacies. The information is received by the secure web server 8, transmitted

to the second server 6, and, from there to the dispensing facility, which processes the request in the same manner as the script dispensing, and as a conventional pharmacist would when non-prescription goods are bought. The web site also offers payment facilities – both for the purchase of non-prescription goods, as well as for prescription goods.

As also mentioned above, the accounting facility 13 enables people to pay for their prescriptions. Patients can give authority to telecommunications centre 9 to set up Direct Debit facilities through their bank to pay for any products purchased. Alternatively, patients can pay using the B-Pay™ facility, or credit cards. The dispensing facility can also be linked – electronically – to government health insurance bodies, such as the HIC in Australia, as well as private health insurance companies (if required), to ensure that rebates, for example under the PBS in Australia, or under the private health insurance policies could be made to the patient and/ or pharmacy as appropriate.

It will be obvious to the person skilled in the art, that modifications are possible within the scope of the present invention. For example, the parties to the system can be amended to conform to the legislation and operation of the healthcare system in the country of operation.

It should be further appreciated by the person skilled in the art that variations and combinations of features described above, not being alternatives of substitutes, can be combine to form yet further embodiments falling within the intended scope of the various embodiments of the invention.

The Claims Defining the Invention are as Follows

1. A system of pharmaceutical prescription and distribution comprising:

   a patient;

   a pharmaceutical dispenser;

   a prescription facilitator in data and control communication with the pharmaceutical dispenser; and

   at least one medical practitioner system in data communication with the prescription facilitator,

   where, the medical practitioner system sends a set of predetermined information representing a prescription for the patient to the prescription facilitator, the prescription facilitator thereafter operating to confirm that the set of predetermined information is representative of a valid prescription and, if confirmed, sends the set of predetermined information to the pharmaceutical dispenser, along with an instruction to fulfil the prescription represented by the set of predetermined information.

2. A system of pharmaceutical prescription and distribution according to claim 1 where the pharmaceutical dispenser, medical practitioner system and prescription facilitator are all operable to produce an identical script from the set of predetermined information.

3. A system of pharmaceutical prescription and distribution according to claim 1 or claim 2, where the set of predetermined information includes a first unique script number.

4. A system of pharmaceutical prescription and distribution according to any preceding claim, where the first unique script number is based on a unique medical provider number assigned to each medical practitioner system.

5. A system of pharmaceutical prescription and distribution according to claim 3, where the prescription facilitator includes a database and confirmation that that the set of predetermined information is representative of a valid prescription includes determining the unique medical provider number from the first unique script number and checking the unique medical provider number against a set of unique medical provider numbers for the at least one medical practitioner system stored in the database.

6. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator includes a database, and where the set of predetermined information includes details of the medical practitioner system's location of practice and confirmation that the set of predetermined information is representative of a valid prescription includes checking details of the location of practice against a set of known practice locations for the at least one medical practitioner system stored in the database.

7. A system of pharmaceutical prescription and distribution according to any preceding claim, where the set of predetermined information includes priority information, said priority information being used by the pharmaceutical dispenser to determine the order of fulfilment of prescriptions.

8. A system of pharmaceutical prescription and distribution according to any preceding claim, where the set of predetermined information includes details of the preferred delivery method of the prescribed medication, the pharmaceutical dispenser thereafter arranging for the prescribed medication to be delivered to the patient in accordance with the preferred delivery method.

9. A system of pharmaceutical prescription and distribution according to claim 8, where the preferred delivery method is one of the following: courier; postal; counter pick-up.

10. A system of pharmaceutical prescription and distribution according to any preceding claim, where the set of predetermined information includes details of whether the prescription facilitator and/or pharmaceutical dispenser are authorised to contact the patient for whom the prescription is being fulfilled.

11. A system of pharmaceutical prescription and distribution according to any preceding claim, where, upon sending a set of predetermined information representing a prescription to the prescription facilitator, the medical practitioner system also generates a prescription receipt, the patient being required to present the prescription receipt to the pharmaceutical dispenser, or their authorised representative, upon taking delivery of the prescribed medication.

12. A system of pharmaceutical prescription and distribution according to claim 11, where the prescription receipt includes a barcode, the pharmaceutical dispenser operating to scan the barcode of the prescription receipt upon delivering the prescribed medication to the patient and thereby confirm delivery.

13. A system of pharmaceutical prescription and distribution according to any preceding claim, where, upon sending the set of predetermined information representing a prescription to the prescription facilitator, the medical practitioner system also sends a communication to the patient.

14. A system of pharmaceutical prescription and distribution according to claim 13, where the communication is one of the following: postal communication; e-mail; SMS message; telephone call.

15. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator includes a script database, the prescription facilitator operable to amend the set of predetermined information to include a second unique script number and to store the set of predetermined information in the database indexed according to the second unique script number.

16. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator contains an inventory database containing information on medication available to be dispensed by the pharmaceutical dispenser and the medical practitioner system checks the inventory database to ensure that the medication to be prescribed is available to be dispensed by the pharmaceutical dispenser prior to communicating the set of predetermined information to the prescription facilitator.

17. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator, medical professional system and pharmaceutical dispenser communicate through at least one of the following: wireless communication means; telephone network; data communication network; virtual private network.

18. A system of pharmaceutical prescription and distribution according to any preceding claim, where communications between prescription facilitator, medical professional system and pharmaceutical dispenser are encrypted.

19. A system of pharmaceutical prescription and distribution according to any preceding claim, where the set of predetermined information is digitally signed.

20. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator is operable to allow a patient to access information relating to their prescriptions stored in the script database and pay for prescribed medication.

21. A system of pharmaceutical prescription and distribution according to any preceding claim, where the prescription facilitator is in data communication with at least one financial institution with which the patient has an account, the prescription facilitator thereafter operable to debit the cost of the prescribed medication from the patient's account with the financial institution.

22. A prescription facilitator for a system of pharmaceutical prescription and distribution, comprising:

means for receiving a set of predetermined information representing a prescription for a patient from a medical practitioner system;

means for sending the set of predetermined information and an instruction to fulfil the prescription represented by the first set of predetermined information to a pharmaceutical dispenser,

where, the means for sending the set of predetermined information is activated only on confirming that the set of predetermined information is representative of a valid prescription.

23. A prescription facilitator according to claim 22, including means for generating script from the set of predetermined information, the script being identical to the script able to be produced by the medical practitioner system from the first set of predetermined information.

24. A prescription facilitator according to claim 22 or claim 23, including a medical provider number database, where, in confirming the set of predetermined information is representative of a valid prescription, the prescription facilitator determines a unique medical provider number from a first unique script number included in the set of predetermined information and checks the unique medical provider number against a set of unique medical provider numbers stored in the medical provider number database for the medical practitioner system.

25. A prescription facilitator according to any one of claims 22 to 24, including a practice location database, where, in confirming the set of predetermined information is representative of a valid prescription, the prescription facilitator checks the medical practitioner system's location of practice included in the set of predetermined information against a set of known practice locations for the medical practitioner system stored in the practice location database.

26. A prescription facilitator according to any one of claims 22 to 25, including a script database; means for amending the set of predetermined information to include a second unique script number; and means to store the set of predetermined information in the database indexed according to the second unique script number.

27. A prescription facilitator according to any one of claims 22 to 26, including an inventory database containing information on medication available to be dispensed by the pharmaceutical dispenser, where, upon receipt of an inventory check communication from the medical practitioner system, the prescription facilitator checks the inventory status of the medication the subject of the request and communicates to the medical practitioner system with the inventory status information for that medication.

28. A prescription facilitator according to any one of claims 22 to 27, including means for encrypting and/or decrypting communications.

29. A prescription facilitator according to any one of claims 22 to 28, including means for verifying a digital signature.

30. A prescription facilitator according to any one of claims 22 to 29, including means for receiving communications from a patient and providing information to the patient relating to their prescriptions stored in the script database in response to said communications.

31. A prescription facilitator according to any one of claims 22 to 30, including means for communicating with at least one financial institution with which a patient has an account, where, upon instructing the pharmaceutical dispenser to fulfil the prescription, the prescription facilitator operates to instruct the financial institution to debit the cost of the prescribed medication from the patient's account.

32. A method of pharmaceutical prescription and distribution including the steps of:

receiving a set of predetermined information representing a prescription for a patient from a medical practitioner system;

confirming that the set of predetermined information is representative of a valid prescription; and

if confirmed, sending the set of predetermined information to a pharmaceutical dispenser along with an instruction to fulfil the prescription represented by the set of predetermined information.

33. A method of pharmaceutical prescription and distribution according to claim 32, including the step of generating a script from the set of predetermined information, said script identical to the script able to be generated by the medical practitioner system.

34. A method of pharmaceutical prescription and distribution according to claim 32 or claim 33, including the step of determining a unique medical provider number from a first unique script number included in the set of predetermined information and where the step of confirming that the set of predetermined information is representative of a valid prescription includes the substep of checking the unique medical provider number against a set of unique medical provider numbers for the medical practitioner system stored in a medical provider number database.

35. A method of pharmaceutical prescription and distribution according to any one of claims 32 to 34, where the step of confirming that the set of predetermined information is representative of a valid prescription includes the substep of checking details of the location of practice of the medical practitioner system included in the set of predetermined information against a set of known practice locations for the medical practitioner system stored in a practice location database.

36. A method of pharmaceutical prescription and distribution according to any one of claims 32 to 35, including the steps of:

amending the set of predetermined information to include a second unique script number;

storing the set of predetermined information in a script database indexed according to the second unique script number.

37. A method of pharmaceutical prescription and distribution according to any one of claims 32 to 36, including the steps of:

receiving an inventory status communication from the medical practitioner system;

checking the inventory status information of the medication the subject of the inventory status request with an inventory database containing information as to the availability of medication available to be dispensed by the pharmaceutical dispenser; and

communicating to the medical practitioner system the inventory status information for the medication the subject of the inventory status request.

38. A method of pharmaceutical prescription and distribution according to any one of claims 32 to 37, including the steps of receiving communications from a patient and providing information to the patient relating to their prescriptions stored in the script database.

39. A method of pharmaceutical prescription and distribution according to any one of claims 32 to 38, including the steps of instructing a financial institution to debit the cost of prescribed medication from a patient's account held with the financial institution.

40. A system for pharmaceutical prescription and distribution substantially as described herein with reference to the drawings.

41. A prescription facilitator substantially as described herein with reference to the drawings.

42. A method of pharmaceutical prescription and distribution substantially as described herein with reference to the drawings.

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