



OpenEyes - Prescribing

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Target Audience

General Interest	✓
Healthcare managers	✓
Ophthalmologists	✓
Developers	✓

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Introduction

The prescription of medicines is an important part of the management of patient. Traditional paper prescriptions made out by hand are time consuming to complete, and error prone. Electronic prescribing offers both greater efficiency, and improved safety over paper based methods. This document describes the specification of the OpenEyes prescribing module for Ophthalmology.

This version of the design offers basic prescribing which allows linkage with the correspondence event, and therefore automatic creation of discharge letters. Future versions will allow more sophisticated linkage with pharmacy systems and additional functions, such as checking availability, and stock control.

The Prescription Event

A prescription is treated as an event in OpenEyes. It contains components which will allow the creation, editing, and saving of a valid prescription. These components are described in the following sections.

The Drug table

This is a list of drugs laid out in a table which make up the content of the prescription, containing the following information.

Item	Description	Possible values
Name	Name of drug, including dose where appropriate	Any from Moorfields Formulary
Frequency	How often the drug is administered	od, bid, tid, qid, 5/day, 2 hourly, hourly, nocte, prn
Route	Where the drug is applied	Topical, Sub-Tenon's, Sub-Conj, Intravitreal, PO, PR, IM, IV, To skin
Eye	Which eye (If ophthalmic medication)	RE, LE, BE
Duration	How long to take the drug for	5 days, 10 days, 2 weeks, 1 month

All items, with the exception of the name, can be edited after the drug has been added to the list. The Drug names, along with additional data are stored in a drugs table, details of which are given in Appendix A. Drugs are entered into the table either individually, or as part of a drug set.

Individual selection

There should be a variety of methods to allow the user to select a drug as rapidly as possible, for example specialty specific drop down menus, or autocompletion from a text box. Filters should be provided to allow more focussed selection for the following categories;

- Route
- Type of drug (antibiotic etc)
- Preservative free



Drugs that are listed as consultant only or as specialty only should be displayed appropriately. Selection of a drug adds it to the drug table, and appropriate values of frequency, route and duration are set as defaults. Frequency, route and duration are set according to default values stored in the drugs table, and the eye defaults to the principal eye for the episode, if it is an ophthalmic medication.

Drug sets

A drug set is a conveniently packaged collection of drugs which are commonly prescribed together, and are analogous to letter macros in the correspondence event. The user should be presented with a specialty specific list of drug sets. Editing of drugs sets is an administrator function.

Controls

The following table lists the controls required and their actions.

Control	Action
Save	Saves and creates the prescription
Delete	Deletes a single drug from the drug table
Clear	Clears all drugs from the drug table
Repeat	Repeats the most recently prescribed prescription for this episode

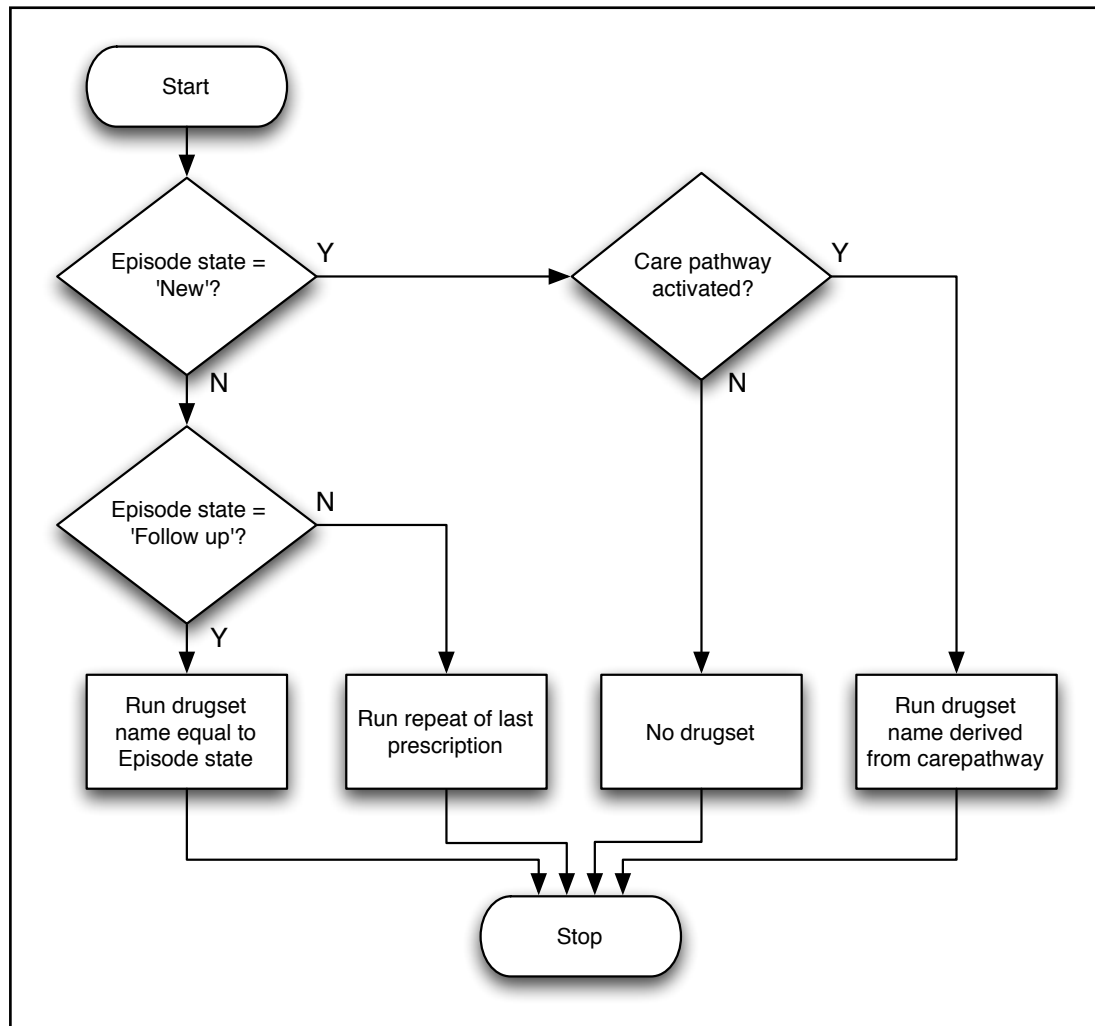
The Prescription

The output of the process should be a formal prescription, initially printed containing the following information;

- Trust header
- Date of the prescription
- Full name and address of patient, date of birth, and hospital number
- All details in the drug table
- Name and description of prescriber

Automation

In line with the design philosophy of OpenEyes to be as efficient as possible, an intelligent guess is made when a new prescription event is created, in an attempt to populate the drug list with the correct prescription. Information is derived from the rest of the system to determine where the patient is with respect to their management, and whether they are being managed as part of a care pathway or not. The following flow chart describes the logic employed.



The list of possible episode states, including what triggers a change, is shown in the following table;

State	Description	Trigger
New	New episode with no previous examinations	Default state for new episodes
Follow up	Existing episode with at least one previous examination	Saving of a second examination event of a new episode, or the second since an operation event
Listed	Has been listed for an operation	Saving of a booking event
Booked	Has been listed and booked for an operation	Saving of a booking event with a date
Post-op	Has just had an operation	Saving of an operation event
Discharged	The episode is complete	Discharging the patient or closing the episode



Appendix A

Details of drugs which can be prescribed are contained in a table which contains all the drugs that are in the formulary for the centre in which OpenEyes is being used.

Field	Description
id	id equal to concept_id in SNOMED
name	Familiar name
code	SNOMED code for drug
term	Preferred SNOMED term for drug, including dose
frequency	Default frequency for the drug
route	Default route for the drug
duration	Default duration for the prescription
type	Type of drug (antibiotic, anti-inflammatory, etc)
no_pres	Is a preservative free preparation
is_ophthalmic	Flag indicating an ophthalmic medication (could alternatively derive from route)
is_consultant_only	Flag indicating that this drug can only be prescribed by a consultant
is_specialty_only	Flag indicating that this drug can only be prescribed by a user attached to a specialty

There is a many to many relationship between the drugs table and the specialty table for drugs with the is_specialty_only flag set.

The possible drug types are those in the following list

- Analgesia
- Antibacterial
- Antifungal
- Antiviral
- Antihistamine
- Steroid
- Non-steroidal anti-inflammatory
- Mydriatic
- Glaucoma
- Tear film supplement
- Miscellaneous