

Clarity Medication Review

Contact

Clarity Informatics Ltd
Bede House
All Saints Business Centre
Newcastle-upon-Tyne
NE1 2ES

www.clarity-informatics.com
www.schin.co.uk

ian.purves@clarity-informatics.com

T: 0191 243 6100
F: 0191 243 6101

Executive summary

Patient safety is a critical agenda for health care practice and is receiving more attention due to well reported failures.

One of the most dangerous activities clinicians undertake is prescribing.

For years clinicians have failed to take notice of computer supported alerts on interactions and contra-indications - mainly because of high false positive rates.

Clarity Medication Review is an international unique and innovative product which takes a patient electronic record and reviews the management of a patients conditions and the safety of their prescribed medication. In addition the tool will enable aggregation of clinical management and prescribing activity into organisation or geographical browsable summaries (dashboards) to monitor and manage quality in healthcare.

Overview

The recent report from the Chief Pharmacy Officer on 'Improving Medication Safety', stated "*Medication errors occur in all health care systems. Serious errors harm patients and expose health professionals to civil liability and sometimes criminal prosecution. They occur too frequently and they are preventable.*"

The report recommended the following steps to ensure safer prescribing:

- Active management and review of long term repeat prescribing
- Implementation of the electronic care record and effective electronic prescribing systems
- Clear treatment plans, shared with all professionals involved in the patient's care
- Double checking of all complex dose calculations

More recently the NPSA report 'Safety in Doses' has highlighted the costs of avoidable harms from medicines (see table).

Tools to support computerised prescribing have been available for a number of years, but they have not always met the requirements of healthcare professionals and have not always been fully used. A major problem with existing tools is that they frequently present users with drug interactions or other alerts that are not clinically important. In addition they only work when adding a new drug rather than when reviewing the drugs the patient is taking.

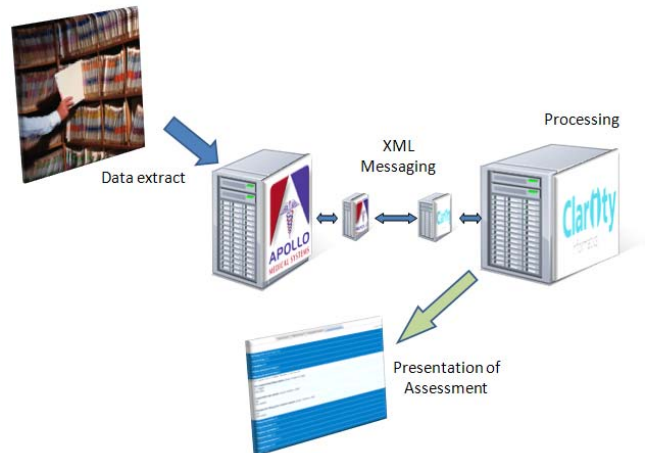
	England
Admission due to ADR (n) ^{1,2}	6.5 million
Bed days ^{1,2}	52 million
Cost admission due to ADR (£) ²	£769 million
Inpatient avoidable harms ³	£400 million
Litigation costs due to medication error ^{3,4}	£48 million
TOTAL	£1.2 billion

Clarity Medication Review



How does Clarity Medication Review work?

Clarity Medication Review utilises Apollo Medical’s SQL suite to extract pseudonymised patient records for all the GP clinical systems in the UK. The extracted data is then transmitted to Apollo and onto the Clarity Datacentre (a tier 3 hosting facility). The messaging throughout is encrypted and uses resilient message queuing. At the Clarity Datacentre the data is converted into a standard data structure and Clarity coding is applied (for both drugs and conditions) and then analysed. The analysis has a high volume capability and is almost real time. Once the processing is complete the data can sent back to the practice or accessed through secure web pages from the Clarity Datacentre.



What can it do?

In the first phase Clarity Medication Review can report on the following issues:

- Number of current drugs and which of these have an systemic effect
- The condition(s) for which the drug is being prescribed or not if no appropriate condition is in the record (including appropriateness for NICE and CKS guidance)
- Number of controlled drugs
- Duplicate ingredients
- Highly sensitive and specific interactions which are graded by clinical relevance
- Highly sensitive and specific alerts to patient conditions (those to avoid and those where actions are necessary if the drug is to be continued)
- Risk score which enables prioritisation of individuals within a population for action on their medication review.

Risk - 6150	Clonidine	Metformin	Senna	Aspirin	Atenolol	Carbamazepine	Chlorzoxazone	Codeine	Diuretics	Fluoxetine	Paracetamol	Penicillin	Tramadol	Warfarin
Interaction														
Diabetes mellitus type II														
Constipation														
Atrial Fibrillation														
Hypertension														
Risk factors for cardiovascular dis														
Dry Skin														
Bacterial skin infection														
Missing indication														
Renal failure														
Asthma														

In future phases the system will improve reporting (e.g. Dosage errors), report on cost effectiveness, give support for a clinician to resolve a patients problem and help in local formulary development and monitoring - further information can be found in Futures over the page.



Clarity Medication Review



Who is it targeted at?

Clarity Medication Review is targeted at the NHS and healthcare systems around the world for individual;

- Prescribers
- Reviewers and managers of repeat prescriptions
- Auditors of the quality of prescribing

What are the Clarity Medication Review futures?

- Report on issues
 - ✓ Missing directions of usage
 - ✓ Dosage errors (max dose exceeded; inappropriate for condition)
 - ✓ Off formulary
 - ✓ Alignment with NICE and CKS guidance
 - ✓ Missed reviews
 - ✓ Over/under utilisation of repeats
 - ✓ Composites to substance conversion
 - ✓ Name potential errors
 - ✓ Missing monitoring results
 - ✓ Dangerous substances
 - ✓ Complex dosage potential
 - ✓ Missing weights for child where appropriate
 - ✓ Prescribing indicators
- Cost effectiveness
 - ✓ Cheaper, as effective alternatives to manage condition
 - ✓ Original packs?
 - ✓ Proprietary to generic conversion
- Support on resolving issues
 - ✓ Data cleaning and missing data
 - ✓ Suggestion of safe alternatives for condition and switch from unsafe
 - ✓ Mitigating actions if 'unsafe' drug to be continued (e.g. reduced dose)
 - ✓ Browse monographs (drugs and condition management through CKS)
 - ✓ Monitoring requirements
- Formulary development and documentation tool

Clarity Drugs Suite

Clarity Medication Review developed by Clarity Informatics Ltd, is part of a new generation of intelligent tools, Clarity Drugs Suite, to support computerised prescribing and its review that can integrate effectively into workflow.

Whilst Clarity Drugs is a very flexible knowledge base, it is not a product we sell. The products are produced by publishing Clarity Drugs knowledge into files for printing or in different data representations for software manipulation. In some instances we produce the software. In others another software vendor generates the software. Currently the products are Medication Review, an ePrescribing engine and Clarity Drug Information System (CDIS) which displays browsable monographs.

Contact



Do you want more information?

Clarity Informatics Ltd
Bede House
All Saints Business Centre
Newcastle-upon-Tyne
NE1 2ES

www.clarity-informatics.com
or
www.schin.co.uk
ian.purves@clarity-informatics.com

T: 0191 243 6100
F: 0191 243 6101