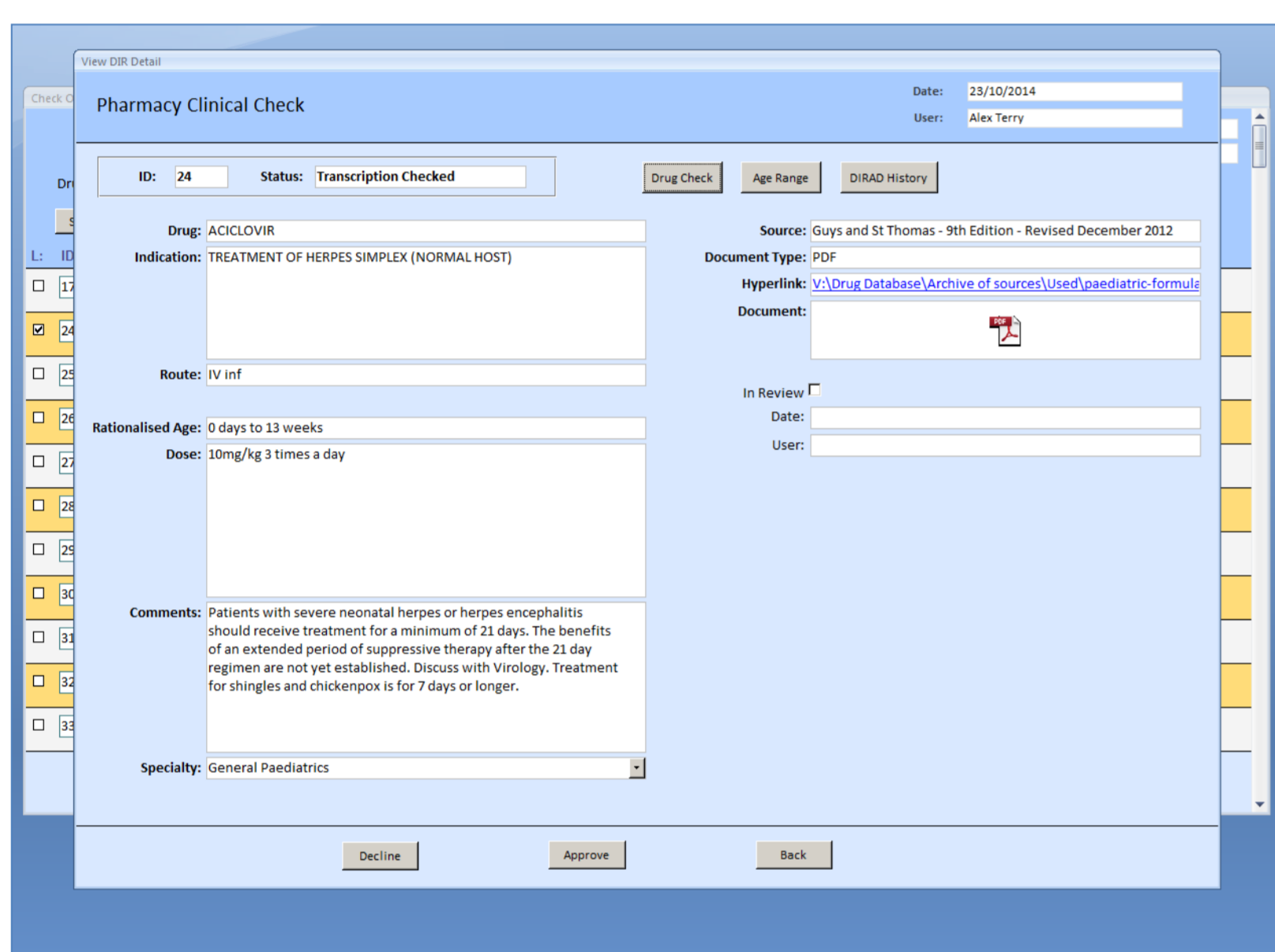


# Electronic Prescribing: The Development of a Paediatric Drug Dose Database

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## Aim

To determine a system of information inputs and checks to support the development of an electronic paediatric drug dose database (DD). The DD is designed as a clinical support tool to aid paediatric drug dose selection within both prescribing and pharmacist clinical-screening. The standardised DD system may be useful as a reference tool within electronic prescribing systems.

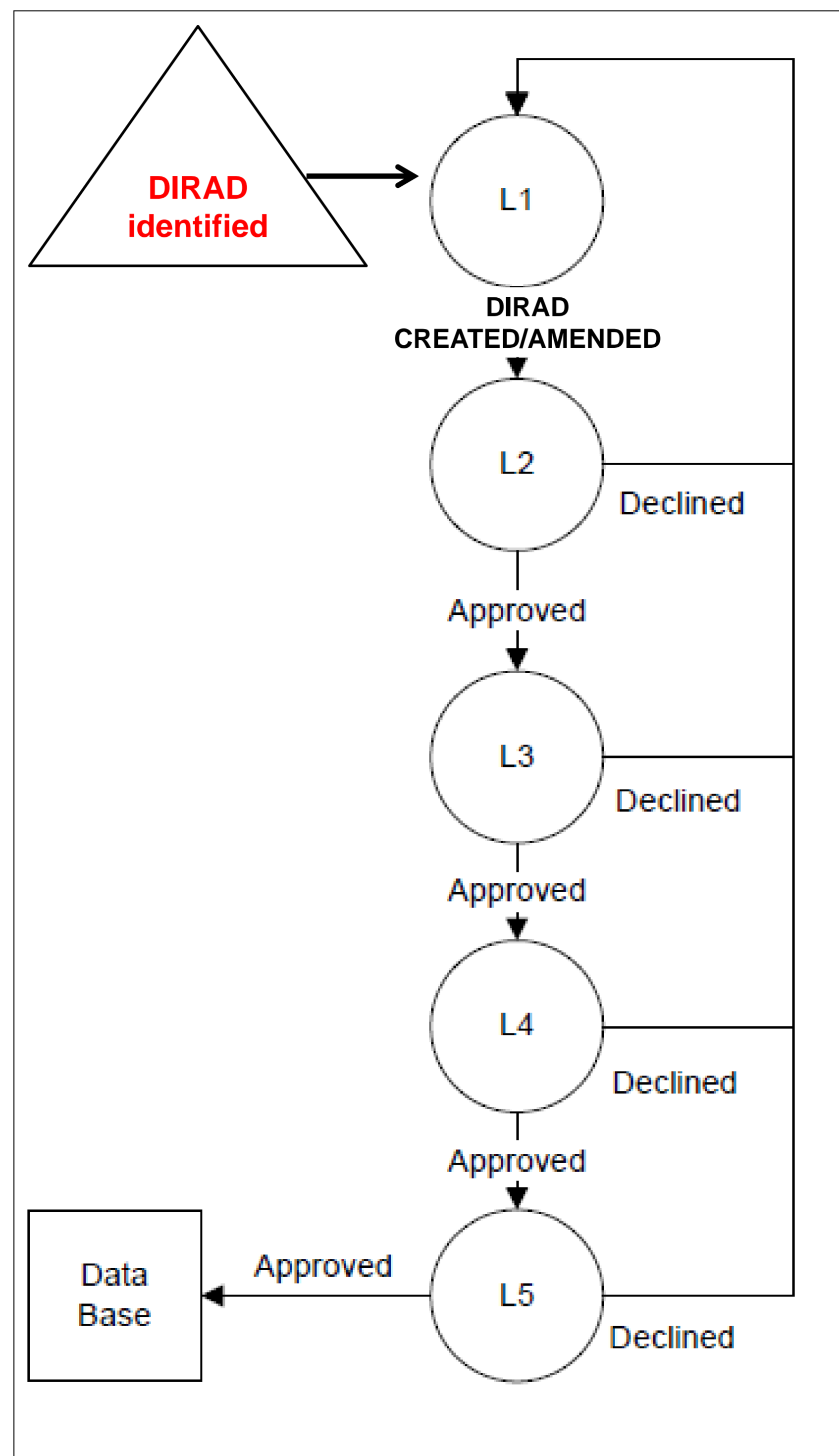


## Method

A multi-disciplinary team was appointed to identify the stages required to build, populate and check the DD. The team included senior and junior medical staff, senior and junior pharmacists, pharmacy technicians, data analyst / database engineer, nursing staff and project manager.

An iterative process of design, build, test and refine was used until governance oversight concluded that the system was robust and fit for purpose. The DD was built in MS Access 2007, and allows multi-user entry of information and checking / verification of details at 5 levels prior to release for clinical use.

Information arbitration is provided by a senior oversight team consisting of the Deputy Chief Medical Officer, Chair of Drugs and Therapeutics Committee and Director of the Academic Practice Unit (a clinical pharmacist).



## Results

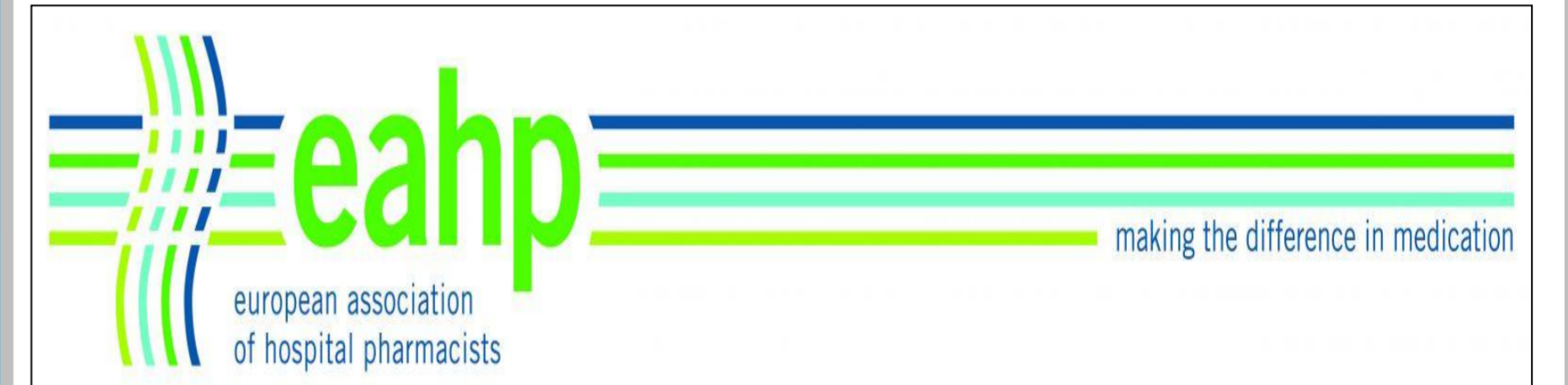
Common data sources used in clinical practice were identified as suitable for information harvesting. These included: standard reference texts e.g. BNFc; Guy's and St Thomas', King's College and University Lewisham Hospital Paediatric Formulary; clinical guidelines – both national and local; relevant clinical alerts etc.

The DD system is based on 5 core data fields known as a DIRAD :

- Drug
- Indication
- Route
- Age
- Dose

Each DIRAD is unique with processes in place to ensure they are not duplicated within the database.

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Input of a draft DIRAD occurs at level 1 (L1), which is the lowest level in the 5 level process. DIRADs pass through each level progressing in turn from L1 to L5. DIRADs are considered by each of the higher levels (L2-L5), which are: L2 – general clinical pharmacist; L3 – specialist clinical pharmacist; L4 – experienced medical staff; L5 – clinical specialty. The DIRAD may only be accepted or rejected at L2 to L5. Any requests for modification requires the DIRAD to return to L1. In this manner DIRADs are only created or modified at L1.

Passage through the system to final approval at L5 requires acceptance of the DIRAD at each and every level in the process. To date (July 2014) over 3,000 DIRADs have been entered into the system representing 765 drug entities. Reference to relevant dm+d codes are allowed within the DD structure. Migration of the system to a Sequel Server (SQL) platform is planned.

## Conclusion

The developed 5 stage process has been successfully used to capture and validate clinical information suitable to support electronic prescribing of medicines for paediatrics. The core data structure is based on unique DIRADs: Drug; Indication; Route; Age and Dose. The database is a suitable aid to identify doses of drugs within paediatrics and is in a standardised format which may be suitable for incorporation into electronic prescribing systems.

**If you have any questions or need more information, please contact:** [david.terry@bch.nhs.uk](mailto:david.terry@bch.nhs.uk)

