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THE ROLE OF THE PAEDIATRIC CLINICAL PHARMACIST IN REDUCING MEDICATION ERRORS: A SYSTEMATIC LITERATURE REVIEWSharon Conroy, Ahmed Alsenani, Helen Sammons. *University of Nottingham*

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Aim Clinical pharmacists in some countries are a recognised primary source for providing evidence based (where possible) information and advice, to ensure delivery of the correct, safest and most effective medication to patients.¹ We wished to determine from the literature: the effect of paediatric clinical pharmacists' activities on reducing medication error rates; the nature of pharmacists' interventions to minimise or prevent medication

errors in children; other pharmacists' contributions to patient care.

Methods Systematic search of five databases: EMBASE, International Pharmaceutical Abstracts, Ovid MEDLINE(R), Allied and Complementary Medicine and Cumulative Index to Nursing and Allied Health Literature to end of July 2013, using 74 keywords. Inclusion criteria: original research studies identifying the effect of pharmacists' activities on reducing/detecting medication errors in neonatal or paediatric patients, or in the general population, where neonatal or paediatric data was separately identified.

Results Twenty-five relevant studies were identified in 13 different countries (mostly the US followed by the UK). Studies used three methods of data collection to detect medication errors: chart review, review of incident reports and direct observation of nurses and parents administering medications. Pharmacists identified prescribing, administration and medication errors in general (where the type of error was not specified). Nine studies provided only the number of errors intercepted with no denominator. The remaining 16 studies identified the error rate using seven different denominators. These methodological variations made studies very difficult to compare.

Pharmacists intercepted 29 types of medication errors, most commonly: wrong dose (21 studies); wrong drug (11); wrong route of administration (8); incomplete prescriptions (8) and omission of medications (8).

Antibiotics were the most common group of medications where interventions were made. The acceptance rate of pharmacists' recommendations by doctors was identified by nine studies and ranged between 24% (in US) and 98% (in Canada).

Pharmacists made 15 different types of contributions. The most common were: provision of information in response to other healthcare professionals' queries (7 studies); cost savings (e.g. €532 per patient saved in a German paediatric neurology ward as a result of preventing wastage of medications) (5); medication reconciliation (3); education of patients/parents in drug administration to facilitate adherence (3).

Education was another successful initiative highlighted in six studies e.g. education of doctors decreased the prescribing dosing error rate from 61.8 to 1.3% of all orders in an Indian specialist children's hospital.² It decreased the nurse administration error rate from 40.4% to 7.9% of all administrations and parents from 96.6% to 5.6% of all administrations in Germany.³

Conclusion Paediatric clinical pharmacists use a wide range of initiatives to reduce and prevent medication errors mainly in the US and the UK. Little information is available from other parts of the world where such activities are also likely to be valuable.

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