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TIME AND MOTION STUDY TO ASSESS WORKLOAD VERSUS STAFFING AT IN PAEDIATRIC HOSPITAL CHEMOTHERAPY MANUFACTURING UNIT

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Objectives In order to improve efficiency of the staff workload in the Paediatric Hospital Chemotherapy Manufacturing Unit, tasks conducted by the pharmacy staff were evaluated with their expected roles. The aims of this study were to establish an understanding of the workload at this unit and to develop a proposal for the unit to become technician-led.

Methods The time taken to perform a pre-determined list of tasks by the senior pharmacy technician was recorded, collated, and compared to tasks performed by the pharmacist. This established the key activities that could be delegated from the pharmacist and the senior pharmacy technician to other members of staff. The findings were discussed with a focus group to establish the efficiency of the manufacturing unit and enable a proposal to be formed.

Key findings A substantial part of the pharmacist's and senior pharmacy technician's time was spent on activities which could be delegated to other members of staff of a lower pay band. The financial implication of this estimated that there would be a reduction of around £8,696.70 with the correct utilisation of the staff members. The pharmacists leading this manufacturing unit were spending most of their time on computing and training, therefore reducing the time available for them to focus on patient-facing clinical activities.

Conclusions The current skill mix was highlighted as being inefficient, due to a lack of delegation from the pharmacists and senior pharmacy technician. A technician-led manufacturing unit can improve the focus of pharmacists on clinical tasks while reducing the cost of activities.

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EVALUATING PROPRANOLOL PREPARATIONS FOR USE IN INFANTILE HAEMANGIOMA

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Aim To evaluate oral liquid formulations of propranolol and to select the optimal preparation for use in Infantile Haemangioma.

Method Four oral liquid preparations of propranolol were considered:

A – an alcohol-free suspension prepared as a 'special' (the current treatment of choice)

B and C – generic solutions available in four different strengths

D – a French solution not marketed in the United Kingdom (UK)

Preparations were evaluated against six criteria:

- Licensing status
- Ease of purchase
- Shelf life
- Excipients
- Ease of dosing
- Cost

Results

Licensing status: Preparation A is unlicensed and should not be used if a licensed product is suitable. Preparations B and C are licensed in children but not for Infantile Haemangioma. Preparation D has a European license for Infantile Haemangioma.

Ease of purchase: Preparation A is made to order but has a short lead time. Preparations B and C are available from wholesalers. No current importer for Preparation D was found.

Shelf life: The licensed preparations have 2–3 years shelf life. Preparation A has a 1 month shelf life.

Excipients: All excipients were considered. Aspartame, ethanol, maltitol, methylhydroxybenzoate, propylhydroxybenzoate, propylene glycol, saccharin sodium and Sunset Yellow can all cause adverse effects. The excipient most likely to cause problems was propylene glycol. This is eliminated by both renal excretion and liver metabolism but, in infants, these processes are immature and accumulation occurs with resultant toxicity. Preparation A contains no propylene glycol and can be used in children of all ages. Levels in Preparations B and C are safe for use in children over 1 month.¹ The propylene glycol content of Preparation D could not be ascertained. Preparation B contained ethanol. Levels were below safety limits² but ethanol competes with propylene glycol for metabolism via alcohol dehydrogenase increasing the risk of propylene glycol toxicity.

Ease of dosing: Dose volumes were calculated for a neonate (3.5 kg), a 6 month-old (7.6 kg) and a 1 year-old (9 kg). All preparations with strengths between 1 mg/ml and 3.75 mg/ml gave suitable dose volumes. Doses for Preparation D are expressed as propranolol base. In the UK, doses are expressed as propranolol hydrochloride. This could be confusing and lead to prescribing or dispensing errors.

Cost: Preparation A was more expensive than B or C. The cost of Preparation D could not be established.

Conclusions Although Preparation D is licensed for Infantile Haemangioma, its use would be complicated by difficulties in