

THE CHALLENGE OF DEVELOPING PAEDIATRIC PHARMACY SERVICES IN ZIMBABWE

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Zimbabwe has been in the news lately due to economical and political instability and violence. In this article the authors would like to share some positive experiences about this southern African country



Paediatric unit, Harare Central Hospital, Zimbabwe

In Zimbabwe, as in many other developing countries, there is a shortage of pharmacists and they often work with limited resources. In 1998, the pharmacy department at Great Ormond Street Hospital (GOSH), London, was granted the Diana Princess of Wales Award in order to collaborate with the Ministry of Health and Child Welfare of Zimbabwe. At the end of 1999, Miss Arenas-López spent six weeks visiting one of the main hospitals in Harare, the capital of Zimbabwe. Two years later in 2001 she made a second visit to follow up the development of clinical pharmacy services.

The aim of the initial visit was to deliver technical support to a specific area of hospital pharmacy. After an initial needs assessment with the directorate of pharmacy services, the provision of training to aid the establishment of paediatric pharmacy services at one of the main teaching hospitals was selected as the main task.

THE HEALTH SYSTEM IN ZIMBABWE

Health care in Zimbabwe is supplied by different providers: Government institutions, private not-for-profit (missions, non-governmental organisations), private for-profit (private hospitals and clinics) and traditional medical practitioners, faith healers and traditional midwives. However, the public sector is by far the dominant player.

Like many other African countries Zimbabwe is fighting major battles against tuberculosis, AIDS, malnutrition, malaria and many other tropical diseases with limited material and human resources. There are many orphans, men live away from home and people from rural areas migrate to the city to find jobs. Three-quarters of Zimbabweans are under the age of 30 and about 45 per cent are under 15.

The major problems facing the health sector are:

- 1 A highly centralised public health administration (currently in the process of decentralisation)
- 1 Loss of qualified health care professionals to the private sector and neighbouring countries.
- 1 Poor financial resources

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The health service has a hierarchy where there are central, provincial and district hospitals, and rural clinics. All these centres are supported by government medical stores (now called NatPharm and privatised), which has the monopoly over drug supplies, dressings, medical equipment, etc.

The "Essential Drugs List for Zimbabwe" is the main medication policy document produced by a multidisciplinary team of experts assisting with treatment guidelines and optimal dosage protocols. It follows the principles outlined for the "Essential Drug List" produced by the World Health Organization and is adapted to cover the medical conditions common in Zimbabwe. This document also includes some paediatric pharmacotherapy information.

There are two main central hospitals in Harare that serve a large proportion of the population as referral centres and act as teaching hospitals for the medical school at the University of Zimbabwe. Harare Central Hospital houses the National Paediatric Institute opened in 1999.

DEVELOPMENT OF PAEDIATRIC PHARMACY SERVICES

The visit in 1999 was focused on facilitating the establishment of paediatric pharmacy services in the new paediatric unit at Harare Central Hospital. Following several discus-

Panel 1: Examples of interventions made by the clinical pharmacists

- 1 Advice provided to nurses on IV administration: reconstitution and further dilution, disinfecting of vial before opening and importance of not removing the rubber bung
- 1 The "Essential Drug List of Zimbabwe" reinforced and explained to ensure adequate drugs, dosing and frequency prescribed in children (sometimes the books were not available on the ward and often paediatric doses were inaccurately extrapolated from adult dose — paediatric formularies were brought from the UK to provide guidance on dosing and frequency of administration)
- 1 Advice provided on appropriate dosing according to renal and liver function (sometimes this was not possible because these tests were not performed routinely)
- 1 Advice provided on administration of oral doses from tablet forms, by crushing and dispersing when appropriate, if a liquid formulation was not available
- 1 Ensurance that the right parenteral route was used for the patient's age, ie, IV rather than IM is preferred for neonates
- 1 Paracetamol recommended rather than aspirin for fever in order to avoid Reye's syndrome
- 1 Parents counselled about drugs directly while on the ward
- 1 Information about new drugs supplied by government medical stores

sions with different managers of the hospital it was decided to start a ward pharmacy service in the paediatric unit for several reasons:

- 1 Paediatric patients were a large proportion of the patients seen daily within the hospital
- 1 It was a new unit with a new team of doctors and nurses who were therefore more likely to accept new ideas (In addition the head of the paediatricians [Dr Munyika] was supportive.)
- 1 The paediatric unit was far away from the main hospital (Logistical problems led to miscommunication between pharmacy and the wards, resulting in severe delays of drug delivery and administration to patients.)

In order to set up a clinical pharmacy service in the paediatric unit some basic requirements needed to be addressed. The chief pharmacist temporarily reorganised the available staff and designated the paediatric pharmacy team (PPT). This consisted of a local pharmacist, the visiting pharmacist and a technician. The pilot ward was the paediatric medical ward for a period of four weeks. An assessment of the medicines available on the pilot ward was performed by the PPT.

ASSESSMENT OF WARD MEDICINES

Ward stock To begin with ward stock was non-existent due to financial and logistical reasons. Basic drugs were sometimes unavailable in emergency situations.

A meeting was arranged with consultants, ward managers and pharmacy staff to highlight the need for stock, to establish a minimum list of drugs required and to discuss installation of lockable cabinets for safe keeping of drugs. Training was provided (one-to-one tuition) to a technician to keep adequate stock control and top up. All stock documentation was produced by the pharmacists.

Storage of drugs To begin with drug trolleys were stored inadequately (exposure to extreme light and heat), there was inadequate cleaning of drug storage facilities, different drugs were stored in the same container, bottles were left opened in the trolley and IV injection ampoules were opened and reused for several patients (opening date not stated, kept in a warm room covered with a cotton ball).

It was decided that the PPT would check the storage of drugs daily and training would be provided to nursing and medical staff on handling and storage of drugs.

Patients' own drugs Inpatients had to pay for medicines while in hospital and drugs were not given on discharge. Drugs were hardly ever named per patient.

Advice was given to nurses on when to discharge patients with their own drugs and when to reuse drugs. Advice about writing patient names on packs was also given.

The PPT was invited to attend the weekly ward staff meetings where the issues discussed in the first weeks included pharmaceutical problems such as storage, vaccines, supply of drugs, syringes, needles and pharmacy opening times. The PPT gave advice to nursing and medical staff on how to improve storage and supply of drugs. As part of their daily work the PPT also participated in ward rounds. Because of the large number of patients and medical teams within one ward the PPT joined different consultants each day. Examples of clinical interventions can be seen in Panel 1.

The PPT made several clinical contributions to the general medical paediatric ward. On arrival, drugs prescribed after the ward round were sometimes unavailable in the main pharmacy. This resulted in an alternative being prescribed on the next round (usually 24 hours later). The pharmacist now participating in the ward rounds could advise on drug availability and alternatives on the same day.

Before a clinical pharmacy service was introduced there were no drug charts available. In order for medicines to be dispensed, the nurses had to bring a patient's notes to the pharmacy and leave them there. This could lead to problems such as delays in drug administration and missing notes. A pharmacist now transcribes medicines needed on to a designed sheet. Notes are no longer required in pharmacy. A copy of a United Kingdom hospital drug chart was shown to guide the staff in producing their own. However, this was unsuccessful due to lack of financial resources.

Doctors were not used to the presence of pharmacists on the ward and the local pharmacist was intimidated by the doctors, mainly due to lack of confidence in clinical issues. To overcome this the pharmacist was trained in basic prescription monitoring, medical abbreviations, biochemistry results, communication with physicians and nurses (one-to-one tuition and reference to appropriate text books and other material) and



A treatment room in the paediatric unit: drug trolleys were stored inadequately with exposure to extreme light and heat

encouraged to record interventions as evidence of service.

The new paediatric unit had facilities for a satellite dispensary. The possibility of opening the new dispensary was considered so that an independent service could be provided from the main pharmacy to the paediatric wards, casualty and the paediatric outpatient clinics.

FOLLOW-UP VISIT

On the second trip Miss Arenas-López visited the paediatric unit for one week to provide further guidance.

Before the visit the directorate of pharmacy at the Ministry of Health and the chief pharmacist at Harare Central Hospital expressed the need for a survey of the service provided to paediatrics. A questionnaire was designed and distributed to nursing and medical staff during this visit. In total 30 questionnaires were distributed, 25 to nurses and five to doctors. Of these, 21 questionnaires were returned, one from the doctors and 20 from the nurses. Of the nurses that returned the questionnaire 85 per cent had been working in the paediatric unit for more than one year. Of respondents, 90 per cent believed that the paediatric pharmacy service was either good or excellent and 91 per cent thought that the relationship between pharmacy/medical and nursing staff was improved due to better communication.

When asked about the ward pharmacy service, 61 per cent of nurses thought that stock lists covered the main items needed, drugs were kept tidy and top up carried out appropriately. Stock security was adequate.

Medication did not get to patients within a reasonable time after prescribing 48 per cent of the time. Reasons for this included supply problems from Friday to Monday, patients not being able to afford medicines and drugs being out of stock. The basic pharmacist duties identified by ward staff were an on call service, prescribing advice, information on drug administration/storage/specific precautions on newly introduced drugs and advice on alternative drugs if the required drug was out of stock.

Of respondents, 71 per cent thought that access to medicines information was significantly improved and 52 per cent believed that the pharmacist contributed to a reduction in errors by explaining how to use drugs and making them aware of potential risks.

The type of information that respondents would ideally like to be kept at ward level included regular updates on drugs kept

in stock and those out of stock, information on storage conditions, on reconstitution and administration of parenteral drugs and on "how long over the expiry can we use a drug?"

Education and training needs identified included the use of devices, adminis-

having direct contact with patients, families and other professionals.

This short project provided evidence on how simple, basic transfer of skills, without extensive financial donations, could make an impact on the quality of health services for children. Furthermore, it was a highly rewarding experience for the visiting author. To find so much co-operation and interest from both pharmacy and medical staff was highly motivating in spite of the fact that sometimes being frustrating when goals could not be achieved due to lack of resources and staff.

There are lots of opportunities for the development of clinical pharmacy in Zimbabwe. Although this country is facing major economic difficulties and near collapse of the health system, Zimbabwean

pharmacists are willing to improve their services in this area.

Following the success and acceptance of this pilot scheme, the directorate of pharmacy at the Ministry of Health is enthusiastic about the extension of the project to other hospitals.

In the long term, the development of local medicines information services to support clinical pharmacists in each hospital will be necessary (currently there is only one medicines information centre, the "Drug and Toxicology Information Service" based at the medical school). Organisation of postgraduate courses for hospital pharmacists with the University of Zimbabwe will also be needed. These would offer continuing education to further develop their role as clinical pharmacists.

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Dr Munyika, head of paediatrics, examining a patient on the paediatric medical ward

tration and reconstitution of drugs, clinical pharmacology and patient counselling.

Views expressed about the paediatric dispensary included:

"Quickly served, no more queuing"

"They understand paediatric needs"

"Paediatric doses get clarified quickly"

"Longer opening hours needed"

"No travelling to main hospital for drugs"

On the second visit the paediatric pharmacy service was still running and the satellite dispensary had opened. There was a full-time pharmacist funded by the Ministry of Health and allocated to paediatrics. She made daily visits to all wards (even the paediatric intensive care unit was in use). She could only join the ward round once a week due to lack of time. She was a motivated pharmacist and well thought of by medical and nursing staff who used her as first point of reference for information about drug usage in children.

Clinical pharmacist interventions were collected as part of a general project in the pharmacy department and supervised by the University of Zimbabwe. Ward pharmacy services had been expanded to some of the adult wards as requested by ward managers following the experience in paediatrics.

FUTURE FOR CLINICAL PHARMACY IN ZIMBABWE

The introduction of paediatric pharmacy services was an excellent way to motivate the pharmacy staff at Harare Central Hospital. The staff were receptive to a potential change in practice and greatly appreciated