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JAMAICA

PHARMACEUTICAL MANAGEMENT INDICATORS SURVEY

September 1992 - March 1993

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JAMAICA

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SURVEY FUNDED BY:
THE USAID/LAC HEALTH AND NUTRITION
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KINGSTON, JAMAICA
SEPTEMBER 1992 - MARCH 1993

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In particular, I wish to thank Ms. Grace Allen and Lois Owen, and the Regional Pharmacists and hospital pharmacists enlisted for this survey. Ms. Allen provided the critical leadership required to motivate and inspire the pharmacists who work for her. Ms. Lois Owen provided insight and institutional understanding of the Ministry of Health's pharmaceutical services, as well as a commitment to improving pharmacist involvement in research activities. The Regional and hospital pharmacists (Judith Linton, Claudette Hobbins, Mr. Morgan, Gloria Cowan, Radcliffe Goldbourne, and A. Spencer-Lewis and Yvonne Amair) took time out of their busy schedules to be trained in survey collection and to carry out data collection activities.

Ms. Sherlene Brown, a clinical pharmacist at the University of the West Indies, coordinated and supervised the surveyors, collected data from the central level and a number of survey sites. Ms. Brown was also responsible for entering the data on a Lotus spreadsheet for subsequent prescribing analyses.

Ms. Eva Henry of the Jamaica Commodity Trading Company provided procurement and pricing information for imported pharmaceuticals and Ms. Hyacinth Gregg, Ms. Brevette Reid-Aird, Ms. Althea Dunbar, Mrs. Wilson, Mr. Soares, and Mr. Watson of the Island Medical Stores facilitated the collection of data from the central warehouse.

LIST OF ANNEXES

Annex 1: Jamaica Food & Drug Act

Annex 2: Jamaica Medicines Act

Annex 3: Jamaica Dangerous Drugs Act

Annex 4: Map of Jamaica

Annex 5: List of Tracer Drugs

Annex 6: Data Collection Forms

Annex 7: Jamaica National Drug Formulary 1980

Annex 8: Drug Price Comparison Tables

Annex 9: Drugs Available at Drug Windows

INTRODUCTION

A USAID-funded Health Sector Initiatives Project is currently being implemented in Jamaica. The purpose of the project is to increase the efficiency and decentralization of the public sector health care system. A parallel purpose is to increase the proportion of health care service delivery and financing by the private sector. Five major components are singled out:

* Decentralization
* Cost Recovery
* Cost-Containment/Efficiency
* Privatization/Divestment
* Private Sector Initiatives

In the Cost-Containment/Efficiency component, two specific objectives have been defined:

- Improved management of primary health activities in 12 districts through a more rational use of resources.

- Promote more rational use of drugs and contain pharmaceutical costs through improved management, continuing education of providers and social marketing campaigns.

The MOH was interested in receiving technical assistance in the design, implementation and analysis of a prescribing survey. The objective of performing such a survey was to obtain objective information on the nature of prescribing patterns at MOH clinics and to present the results of the survey to MOH health care providers. The survey analysis would provide measures of "appropriate" prescribing and the prescription medicine costs associated with appropriate and inappropriate prescribing. This survey will provide information useful for focusing the management improvement initiatives and developing targeted provider and patient educational programs on the appropriate prescribing, dispensing, and use of pharmaceuticals.

While the design and execution of the prescribing survey did not directly follow the methodology of the indicator survey methodology, information collected can be used. Additional information was collected at the central health care level to answer questions included in the indicator survey. The following pages provide answers to the indicator survey questions.

OBSERVATIONS AND RECOMMENDATIONS

The Ministry of Health, Pharmaceutical Services Division (PSD) in Jamaica has recently found themselves at a critical point in the restructuring of this Division. The prior head of the PSD was a strong Division head with a lengthy term of service. Procedures were deeply entrenched and the focus of the Division was heavily administrative. Ms. Allen the recently appointed the Director of the PSD, has redirected the focus of the Division to promoting rational drug use. Her approach to the PSD has been extremely proactive. She has been particularly interested in promoting rational prescribing and the active involvement of pharmacists in the counseling of patients and the monitoring of drug prescribing. Because of her interest in rational drug prescribing, she felt strongly that the USAID funded survey be primarily directed to the analysis of prescribing patterns in the country. In order to meet her needs, certain indicators were collected as a by-product of the prescribing survey, and one was not possible to obtain because of the unique characteristics of the surveyors.

While the information gathered on pharmaceutical supply management provides a good overview of the pharmaceutical system in Jamaica, specific areas were not studied in depth and there are many collateral issues (financing, private sector, devaluation, cost sharing, etc) that are too complicated to analyze in this survey.

A. POLICIES, REGULATIONS AND FORMULARIES

As with many developing countries, policy, regulatory and formulary procedures exist. Financial and personnel resources limit enforcement. Thus, while a national drug policy exists, specific elements need to be actively supported to reach the most optimal outcome. For example:

* The National Drug Formulary was last published in 1985. This prescribing guide requires updating, publishing and active distribution.

* The Vital, Essential, Necessary (VEN) Lists (by facility type) is currently being reviewed and revised. This process should be fully supported to achieve revised VEN lists as soon as possible.

* Product quality control procedures are conducted at Island Medical Stores upon receipt of products. This consists primarily of visual inspection to identify damaged or lost products. No formal mechanisms exist for routinely assessing drug product quality or for responding to complaints about drug quality from the field.

* While a VEN List is available at MOH Health Facilities, no current therapeutics manual or treatment guidelines are available.

* There are registration requirements for both pharmaceutical products and establishments (manufacturers and pharmacies), but monitoring and enforcement capacity is minimal.

RECOMMENDATIONS

1. Most drugs are procured by the Island Medical Stores from local manufacturers or through the Jamaica Commodity Trading Company. Hospitals may also procure locally for emergency requirements,or for special or out-of-stock items. The Ministry of Health should require that all procurements made through this mechanism, or any other, be limited to products on the VEN Lists. Because there will always be requests for exceptions, the Ministry should specify criteria and procedures for making and granting requests.

2. The prescribing survey revealed that prescribing guidelines/treatment norms and therapeutics manuals are seldom available in clinical facilities. In many facilities, nurse practitioners, mental health assistants, pharmacy assistants, and other assistant health professionals are actively treating and dealing with patients. These individuals would strongly benefit from being trained in the use of treatment guidelines developed by clinical experts in a variety of specialty areas. The prescribing analysis revealed a variety of prescribing deficiencies.

3. Enforcement of drug import, drug registration, drug dispensing, and drug advertising legislation and regulations is hampered by lack of personnel resources. These activities should be strengthened through personnel recruitment or assignment and specific training. A potential source of inspectors is the regional pharmacist personnel. The benefit of using the regional pharmacist is that of being available locally for inspections in their regions. A drawback to their use is that they already encompass a broad scope of responsibilities and if they are to assume clinically-oriented tasks as well, they may be overtaxed.

4. Procedures for drug quality assessment and follow-up of drug quality complaints need to be clearly defined and actively followed. Sampling methodologies for drug quality control testing of products arriving at Island Medical Stores need to be developed. Currently, warehouse personnel is familiar with procedures for reporting damaged or missing products upon receipt at the warehouse. Systematic inspection for quality problems did not appear to be occurring.

5. The drug registration process should be computerized to facilitate registration processing, investigation, reporting, and compliance monitoring.

B. PROCUREMENT AND AVAILABILITY

The prescribing survey revealed the availability of basic items during the time-period analyzed. Approximately 92% of drugs prescribed were dispensed. In some cases, however, a therapeutic substitute may have been provided. At the same time, a check of recent purchases for the same products showed that the prices being paid are an the average 84.2% of the international averages for fifty percent of the tracer drugs and an average of 205.1% greater than international averages for the other half of the tracer drugs.

The problems with procurement currently relate to the recent currency devaluations which have reduced the purchasing power of the pharmaceutical budget. Ms. Grace Allen calculated that the MOH really needs a budget of US$12.2 million rather than the US$4-5 million that is budgeted. When the lack of adequate financial resources is coupled with inefficiencies and inappropriate prescribing, there is call for pharmaceutical system improvements to minimize the gap between needs and resources.

RECOMMENDATIONS

* Train staff in drug needs quantification methods, based on the essential drug list, and taking into account such factors epidemiological trends, anticipated levels of service and current stock levels.

* Minimize the need for emergency purchases by hospitals by making the centralized procurement process more efficient.

* Keep the VEN lists updated to include clinically superior products as soon as they are so identified in order to effect pooled procurement of these products.

* Develop and enforce guidelines and procedures for hospital purchase of "specialized" pharmaceutical products.

C. COMMUNICATIONS FOR RATIONAL DRUG USE

An over-riding concern by the PSD and many of the health practitioners in the MOH system is that of inappropriate prescribing and use of pharmaceuticals. It has become apparent to the PSD that inadequate prescribing results in waste, added costs, and patient dissatisfaction. PSD has been actively pursuing strategies to promote rational drug use. Among activities currently underway or planned are

* Workshops are being held to review the VEN lists and produce updated lists. All interested MOH health practitioners are invited to participate in the workshops. Concomitantly, clinical experts present current concepts in therapeutics to workshop participants.

* Patient education posters on rational drug use are being prepared for display in waiting areas near the pharmacies.

* Prescribing surveys are being conducted to identify areas of irrational drug prescribing.

* Drug utilization review analyses have been performed on a sample of ambulatory drug prescriptions to identify drug interactions or conflictive therapy.

The health professionals in Jamaica are well trained and have demonstrated an interest in improving the rationality of their therapeutic, patient counselling, and monitoring activities. With additional training and direction, they could easily be effective in improving prescribing and drug use in the MOH population.

RECOMMENDATIONS

1. Train pharmacists to perform drug utilization review activities.

2. Develop treatment norms for the most frequently occurring morbidities.

3. Train pharmacists to interview and counsel patients regarding optimal drug use.

4. Update Prescribing Guide.

5. Conduct a prescribing survey in hospitals. Identify the predominant therapeutic problems. Present results to hospital health practitioners.

A. POLICY, LEGISLATION AND REGULATION

1. Existence of a National Drug Policy

Jamaica has a national drug policy in place. This policy includes the development and maintenance of a National Drug Formulary, use of a Vital, Essential, and Necessary drug list by facility type. The Food and Drugs Act and the Pharmacy Regulations (1975), both address the control of import, export, manufacture of drugs and of distribution, storage and sale. The Food and Drug Act also includes authority to regulate advertising and labelling.

****

The Food and Drugs Act and The Pharmacy Regulations (1975) address the control of import, export, manufacture, distribution, storage, and sale of drugs.
A national drug formulary, vital, essential, necessary (VEN) drug lists, and promotion of rational drug use are components of the national drug policy.

2. Existence of components of drug control legislation.

Drug control legislation, as well as an enforcing agency exist in Jamaica.

****

	LEGISLATION IN PLACE	ENFORCING AGENCY	
Drug Manufacturing	YES	Food & Drug Act	PSD
Drug Registration	YES	Food & Drug Act	PSD
Drug Distribution	YES	Food & Drug Act	PSD
Prescription of Drugs	YES	Medicines Act	
Sale of Drugs	YES	Pharmacy Council	

3. Proportion of pharmaceutical products on the market currently registered.

For a sample of 100 products selected at random in retail pharmacies, 67-99 were registered.

****

This was verified by manually searching the drug registration records at PSD. Seventy-nine products of the hundred were registered.

4. Type of drug registration information system.

The Pharmaceutical Services Division operates a manual drug registration system. All required information is available. The system is scheduled to be computerized as a component of the HSIP Project.

****

One pharmacist is responsible for drug registration, labeling, and advertising. A second person is responsible for pesticide registration. The HSIP Project has ordered a computer for PSD. I understand that it will also be used to operate the drug registration system. The time-line for the purchase and installation of the computer at PSD has slipped substantially.

5. Whether generic substitution is allowed.

There is no law or regulation that specifically allows or encourages generic substitution; however, product substitution is common in the MOH health Facilities, and in the private sector, especially when the patient cannot afford to purchase a more expensive brand name product.

****

A prescribing survey conducted in ambulatory care facilities revealed that prescribers ordered prescriptions by brand name approximately 60% of the time. In these public health facilities, however, the prescription was filled with whatever brand or generic item was available. Where the specific item (generic or otherwise) was not available, the patient was instructed to buy the product elsewhere, or a therapeutic substitute may have been dispensed (e.g., tetracycline instead of doxycycline).

B. FORMULARIES AND ESSENTIAL DRUG LISTS

1. Number of drugs on National Formulary List.

Jamaica possesses a National Formulary List -- "Jamaica National Formulary - 1980." The total number of unique, generic drug products listed is 1010.

****

While a National Formulary List exists, the VEN Lists have been used for procurement purposes. The 1980 date of creation of the National Formulary reflects the obsolescence and limited use of the list.

2. Number of drugs on PHC Essential Drug List.

Vital, Essential, and Necessary (VEN) Lists exist which contain drugs for routine use in the MOH health care facilities. The lists vary by the type of institution as does the number of products. Since the VEN Lists were in the process of revision, the number of drugs on the list is not a true reflection of what is available or used.

****

The VEN Lists are a subset of the National Formulary List. The VEN Lists are in the process of being revised. Because the VEN Lists were in the process of being revised, I was not able to verify that the primary health care used a VEN list with products appropriate for that level of health care. These newly created VEN Lists might benefit from a clinical review from the standpoint of facility type and morbidity as soon as they have been created.

3. Existence of a National Formulary Manual providing basic drug information for prescribers revised within the last 5 years.

   A formulary manual exists and was revised in 1989.

****

These formulary manuals are readily available, but somewhat obsolete.

4. Presence of a National Formulary Manual or Essential Drug List Manual, revised within the past 5 years at public sector facilities.

The VEN List is used by all of the health facilities surveyed for ordering from IMS. At least one National Formulary Manual is available at the majority of health facilities, but is not used.

****

C. PUBLIC SECTOR PHARMACEUTICAL PROCUREMENT

1. Policy exists to limit public sector pharmaceutical procurement to items on the national public sector drug list.

A policy to limit public sector pharmaceutical procurement to items on the VEN List does exist. However, hospitals are allowed to use the fees collected from patients to purchase drugs and medical supplies from local private pharmacies. Frequently, these purchases are for specialized items that are viewed to be essential and are not available through the typical procurement mechanisms.

****

Control over these purchases is exerted primarily by the hospital administrator, sometimes in consultation with the pharmacist, and upon request by the physician.

2. Coverage by a centralized system for routine procurement of public sector drugs.

The Ministry of Health's central procurement agency for imported drugs and medical supplies is the Ministry of Health's Island Medical Stores. The Island Medical Stores uses the Jamaica Commodity Trading Company (JCTC) for procurement of imported items. The JCTC managed procurements for 80% of the MOH drug budget items in 1991. The balance is managed by the PSD (through the Island Medical Stores) and by individual facilities (through local purchases).

****

3. Percentage of average international price paid for the last regular procurement.

Due to years of experience and the consolidation of purchases through JCTC the prices obtained for the Ministry of Health were reasonably priced. For those products that were less than the average international price as published in the MSH International Price Indicator Guide 1990, the prices averaged 84.2% of the international price. For those products that were greater than the international price, the prices averaged 205.1% of the international price. Overall, the average price differential was 144.63%. Fifty percent of the products with prices available had prices greater than the international price. Five of the eight products where the Jamaica price paid was higher were from the antibiotic class. Two were acetaminophen products (locally produced) and the remaining drug was digoxin.

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The list of tracer drugs is appended as Annex 5.

COMPARISON OF JAMAICAN DRUG COST VS AVERAGE INTERNATIONAL PRICE

Tracer Drugs	Last Procurement Cost (US$)	AVG Int'l Price* (US$)	% of AVG Int'l Price
1 HCTZ 50mg tab	0.0039/tab	0.0042/tab	92.9%
2 Acetaminophen 500mg tab	0.0175/tab	0.0060/tab	291.7%
3 Acetaminophen Elixir	0.33/bottle	0.282	117.0%
4 Methyldopa 250mg tab	0.0279/tab	0.0320/tab	87.2%
5 Reserpine 0.25mg tab	0.0039/tab	0.0039/tab	100.0%
6 Chlorpropamide 250mg tab	0.0092/tab	0.0107/tab	85.9%
7 KCl	0.0094/tab	n/a	
8 Propranolol 40mg tab	0.0059/tab	0.0090/tab	65.6%
9 Salbutamol 4mg tab	0.0086/tab	0.0095/tab	90.5%
10 Salbutamol liquid	0.82/bottle	n/a	
11 Diphenhydramine 10mg/ml inj	1.8897/vial	n/a	
12 Digoxin 0.25mg tab	0.0162/tab	0.0051/tab	317.6%
13 Tetracycline 250mg cap	n/a	0.0125/cap	
14 Ampicillin/amoxicillin 250mg cap	0.074/cap	0.0438/cap	168.9%
15 Ampicillin 500mg cap	0.052/cap	0.0667/cap	77.9%
16 Ampicillin 125mg/5ml susp	0.0296/ml	0.0092/ml	321.7%
17 Ibuprofen 200mg tab	0.0103/tab	0.0140/tab	73.6%
18 Pen G crystalline 1MU	0.2696	0.1815	148.5%
19 Benzathine Pen 2.4MU	0.4210	0.3772	111.6%
20 Procaine Pen 3.0MU	0.5397	0.3303	163.4%

*(MSH Int'l Drug Price Indicator Guide 1990)

4. Percentage of Ministry of Health drugs purchased through competitive methods.

Approximately 95% of the MOH drugs are purchased through competitive methods. A small percentage of drugs are purchased by the institutions and the PSD for emergencies.

****

80-85% are purchased by JCTC by competitive methods and the remaining 5-10% is purchased by IMS through requests for competitive bids from local suppliers. The remaining 5% is purchased directly from local suppliers or pharmacies by the hospital or PSD for emergency needs.

D. PRODUCT QUALITY ASSURANCE

1. Use of the WHO Certification Scheme.

Jamaica is a member of the WHO Certification Scheme on the Quality of Pharmaceutical Products Moving in International Commerce. The drug registration requirements include a certificate of quality from the country of origin.

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2. Existence of a functioning system for reporting product quality complaints.

A formal reporting system for product quality complaints is not in place.

****

Reports are made spontaneously. Only three complaints were made last year. PSD is responsible for following up on complaints about product quality control. Most such complaints come from the pharmacists.

E. PUBLIC SECTOR PHARMACEUTICAL LOGISTICS

1. Functionality of information system for inventory management.

Information on the status of inventory management information systems at the IMS warehouse is summarized below.

****

	Island Medical Stores
Central Register	No
Bin Cards	Yes, and separate bin cards for donated products
Difference Between Central Register and Bin Cards	Not Calculated
Percentage of Products Where Bin Cards and Physical Count Agree	0%

% Discrepancy Between
Bin Card and Physical Count:

32.97% (among products where physical count was less)
176.2% (among products where physical count was more)
48.4% (for all products)

The inventory management information is recorded on bin cards, although these are computed frequently they are not always up to date. The Indicators Guide proposes comparing in one central and one regional storage facility the quantities of 20 tracer drugs indicated to be in stock by central registers and bin cards with amounts revealed to be present by physical counts. That exact approach would not work for Jamaica because the Island Medical Stores has only a central and no regional storage facilities.

There were some practical problems to be overcome in collecting data for this indicator. While there should never be differences between bin cards and physical counts, there is a legitimate reason for differences between these two items and central registers. That reason is the time lag between the point when stock is removed from its place based on an issue ticket, and the point when the issue ticket is

used to post the central register. The result is that the central register will frequently show more units in stock than will be simultaneously present at the count.

Additionally, discrepancies were noted due to the difficulty with counting the number of units stored. In the case of several drugs, boxes of the product were stacked in a disorganized manner. All boxes for the same product were not stored together and separate from boxes of other products. In order to be absolutely sure of the physical count, several warehouse workers would have had to be enlisted to rearrange hundreds of boxes before being able to count the number of units of product actually in the warehouse.

Another problem noted was the existence of drugs furnished under donor programs. The records for these drugs were kept separately. However, in some instances, the warehouse worker did not accurately distinguish between the donor product and the Island Medical Store product. This resulted in adding to the confusion in counting the units of product.

2. Availability in public sector health facilities of a set of tracer drugs used to treat common diseases.

For the central level, this measure was taken by checking availability of 20 tracer drugs at the Island Medical Stores warehouse. For the peripheral level, availability was checked based on the facilities visited for the prescribing survey.

****

	IMS	AVG FOR ALL SURVEY FACILITY SITES
Number of Tracer Drugs	20	20
Percentage of Tracer Drugs Available	100%	95%
Number of Tracer Drugs Normally Stocked	20	19
Percentage of Normally Stocked Drugs Available	100%	100%

3. Stockout incidence and percent of time out of stock for a set of tracer drugs.

This measure was taken at the Island Medical Store's warehouse. The period covered is February 1992 through January 1993. The results are summarized below.

****

	Island Medical Stores
Number of Tracer Drugs	20
Number of Tracer Drugs Normally Stocked	20
Percentage of Normally Stocked Drugs with Stockouts	20%
Average Percentage of Days Out of Stock for Drugs with Stock Outs During Preceding 12 Months	27%
Average Percentage of Days Out of Stock for all Drugs During Preceding 12 Months	5.44%

F. PUBLIC SECTOR BUDGET AND FINANCE

1. Public Sector Expenditures on Pharmaceuticals, US$ per capita.

For 1991-92 fiscal year, the Ministry of Health's per capita expenditure on pharmaceutical products is estimated at US$1.98.

****

Ministry of Health Drug Budget 1991-1992	J$ 80,000,000	US$ 3,571,429
Actual Expenditure 1991-1992	J$ 67,200,000	US$ 3,000,000
British Line of Credit		US$ 500,000
World Bank Donation of Drugs		US$ 1,300,000
Total		US$ 4,800,000
Population	2,430,000	
Per Capita Expenditure (includes medical supplies)		US$ 1.98

2. Public sector revenue from pharmaceutical cost recovery, US$ per curative encounter.

J$50 (US$2.23) is charged by hospitals for pharmaceuticals dispensed during a MOH visit. The cost recovery per curative encounter could not be calculated, however. An additional form of cost recovery is being employed through the use of drug windows. There are three facilities (two health centers and one hospital) that operate a drug window. The drug window stocks about 40 drugs and sundries that are sold to individuals at the MOH's cost plus a small mark-up. See Annex 9.

****

This measure was not available in Jamaica as defined. Only hospitals charge a user's fee. In some hospitals, the charge is for all services and includes drugs. At some hospitals, a fee is recovered at the pharmacy for pharmaceutical services. Very poor individuals are not required to pay the user fee. Conversely, individuals who also have Blue Cross insurance are charged a cost plus a fee. Some of these user fees are eventually used to purchase drugs, but this is managed centrally through the hospital administrator. Within the context of this field test, there is no useful way to link income destined for drug purchases directly to individual curative encounters.

3. Percentage of total government expenditures used for health budget.

For 1991, an estimated 3.4% of total government expenditures was devoted health and health related activities.

****

Expenditure	US$ Amount
Total Government	$ 1.3 BILLION
Total Ministry Health	$ 43 MILLION

4. Percentage of total government health expenditures used for pharmaceuticals.

In 1991, an estimated 8% of total government health expenditures was used for pharmaceuticals.

****

G. PATIENT ACCESS AND DRUG UTILIZATION

1. Public sector health facilities per capita.

   There is one health facility per 5,800 people in Jamaica.

****

In Jamaica there are 391 health centers, one orthopedic hospital, one cancer care hospital, one mental rehabilitation institution, one chest hospital, and 20 hospitals - including the University Hospital of the West Indies. This provides the population of 2,430,000 with 414 public sector health facilities.

Thus, in Jamaica there is one health facility for every 5,800 people.

2. Average number of drugs prescribed per encounter.

Based on a survey of 23 clinical facilities and 2493 patient encounters, the average number of drugs prescribed per encounter is 2.4, with the range among facilities being from 1.4 to 3.8. The median is 2.3.

****

3. Percentage of drugs prescribed by generic name.

Based on a survey of 23 clinical facilities and 2493 patient encounters, the average percentage of drugs prescribed by generic name is 39.5%, with the range among facilities being from 30.1% to 49.0%.

****

4. Percentage of patients receiving Injections.

Based on a survey of 23 clinical facilities and 2493 patient encounters, the average percentage of patients receiving injectable drugs is 3.7%, with the range among facilities being from 0 to 15.9%. The median is 3.7%.

****

Subcutaneously administered insulin injection prescriptions are included in this percentage. This percentage, however, does not accurately represent all injections given at a health care facility. At some health facilities, the patient receives an injection by a nurse in the injection room. Records for these injections are kept separately from the pharmacy records. It was not possible to identify the number of injections per patient encounter.

5. Percentage of patients receiving antibiotics.

Based on a survey of 23 clinical facilities, 755 prescriptions were dispensed. This represents 12.6% of prescriptions and results in an average of 0.3 antibiotic prescriptions per patient or, in other words, an average of 30% of patients received an antibiotic.

****

As mentioned before, injectable antibiotics may be underrepresented due to the separate records kept for injectables at some facilities.

H. PRIVATE SECTOR PHARMACEUTICAL ACTIVITY

1. Number of licensed or registered drug outlets per capita and per government drug inspector.

In Jamaica there are 250 licensed, private drug outlets. That represents one drug outlet per 9700 people. That also represents 62.5 drug outlets per government inspector.

****

The Pharmacy Council has two drug inspectors and the MOH Division of Pharmaceutical Services has two drug inspectors. There are plans to use the five MOH Regional Pharmacists to serve as regional drug inspectors.

2. Value of total private sector pharmaceutical sales, $US per capita.

For 1991, the value of private sector pharmaceutical sales is estimated at $25 million (imported drugs only). This represents $US 10.28 per capita.

****

We were only able to obtain an estimate of total private sector pharmaceutical sales because this information is jealously guarded. This may be because of competitive secrets or fear of taxation. There are fifteen local distributors.

3. Total value of drug market, public and private sector, US$ per capita.

For 1991, the combined value of the public and private sector drug markets is estimated at $12.27 per capita.

****

See the values in response to Question F.1. and H.2..

4. Percentage of products on National Formulary List currently manufactured or co-manufactured locally.

   15-20% of products (by cost) are manufactured locally.

****

This information was provided by the Division of Pharmaceutical Services based on the fact that 80-85% of drug products are imported. The Division of Pharmaceutical Services does not have a system (computer or manual) to produce reports that can be tied to the National Formulary or the VEN Lists.

There are five major local manufacturers. They primarily supply the MOH's requirements for antacids, IV fluids, basic antibiotics, analgesics (such as acetaminophen, ibuprofen, aspirin).

5. Availability of antibiotics without a prescription.

We were not able to obtain this indicator.

****

Legally, antibiotics may not be dispensed without a prescription. Antibiotics can be obtained, however, based on a personal relationship with the pharmacist. We were not able to send surveyors to attempt to purchase antibiotics, because being MOH Regional pharmacists, it would be unlikely that an antibiotic would be dispensed without a prescription.

ANNEX 5

TRACER DRUGS

1 HCTZ 50 mg tablet
2 Acetaminophen 500mg tablet
3 Acetaminophen elixir
4 Methyldopa 250 mg tablet
5 Reserpine 0.25 mg tablet
6 Chlorpropamide 250 mg tablet
7 KCl liquid
8 Propranolol 40mg tablet
9 Salbutamol 4mg tablet
10 Salbutamol liquid
11 Diphenhydramine 10mg/ml - 10ml INJ
12 Digoxin 0.25 mg tablet
13 Tetracycline 250 mg CAP
14 Ampicillin/Amoxicillin 250mg capsule
15 Ampicillin 500mg capsule
16 Ampicillin 125mg/5ml suspension
17 Ibuprofen 200 mg tablet
18 Pen G crystalline 1MU
19 Benzathine Pen 2.4MU
20 Procaine Pen 3.0 MU