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Public Hospital Inpatient Discharge Survey 2005

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Abstract

Objectives: Inpatient services represent the most costly element of national health services, and the bulk of inpatient activity occurs in public sector hospitals. Previously, routine statistics on inpatients at government hospitals have been restricted to aggregate patient numbers. To address this gap, this first national survey of inpatient discharge records was conducted which develops a profile of inpatient discharges in the country in 2005.

Methods: Data were collected by extracting information from the bed head ticket record compiled for each discharge at Government Hospitals. Using a paper recording form, information was recorded on a sample of patient discharges for 2005. These were taken mainly from a representative sample of facilities at all levels in three districts, supplemented by teaching hospitals in other districts. Data collected included the age and gender of inpatients, the outcome of admission, the presumed diagnosis (ICD-10) and treatment interventions provided, including a full listing of all medicines dispensed. During the data analysis stage, the sample was re-weighted by reference to the national patient statistics, in order to ensure the overall representativeness of the final estimates.

Results: There were a total of 4.3 million inpatients discharged from Health Ministry hospitals in 2005. Female and male patients accounted for 50% each of all discharges, implying a higher hospitalisation rate for males than females. The average length of stay was 4.2 days, with most discharges (61%) taking place on the day of admission or within the next two days. Some conditions were characterised by longer than average lengths of stay, such as schizophrenia (20.5 days), fractures (7.3), and bronchitis and emphysema (5.9). For most primary diagnoses, there is little variation in lengths of stay across different levels of hospital, although the length of stay tends to increase at higher levels of hospitals. Childbirth was the leading cause of admission in females, whilst injuries were the leading cause in males. In young children, the leading cause of admission was diarrhoea and gastroenteritis due to infection; whilst in older adults the leading cause of admission was asthma followed by hypertensive heart disease. An average of four medicines were prescribed or dispensed to each patient, with paracetamol being the most commonly prescribed medicine (42% of all inpatients).

Highlights

Patient characteristics

- A total of 4.3 million inpatients were discharged from Ministry of Health and Provincial Departments of Health institutions in 2005, according to MOH statistics (Medical Statistics Unit, 2007). The Public Hospital Inpatient Discharge Survey (PIHDS) 2005 estimates these to have accounted for 18 million days of care, and occupied a bed for an average of 4.2 days.
- Female and male patients accounted for 50% each of all discharges (Table B1). As females modestly outnumber males in the overall population, this indicates that the hospitalisation rate for males overall is higher.
- Infants (0 years) and the young elderly (65-74 years) and older elderly (75+ years) accounted for 3.5, 8.9 and 4.5% of all discharges, but greater proportions of all bed-days, at 5.0, 9.6 and 5.0% (Figure 1)
- The annualised rate of discharges from government hospitals was equivalent to 22 discharges per 100 capita in 2005. In children aged less than five years the rate was equivalent to 25 per 100 capita, but fell to a rate of 10 in children aged 5-14 years. At higher ages, the rates gradually increased from 17 in those aged 15-24 years to 45 per 100 capita in those aged 65-74 years, with a small decline to a rate of 41 in those aged more than 74 years (Figure 2). A small peak in the 25-34 years age group was also noticeable, and can be explained by admissions for childbirth.

Contents

Diagnoses

- Tables B1 and B2 show the commonest primary diagnoses in patient discharges, classified by sex and age group. In both females and overall, the leading cause of admission was childbirth, accounting for 5.5% of all admissions, and 11.0% of admissions in females. After childbirth, admission for reasons of injury was the next commonest diagnosis, but this was predominantly a male phenomenon, with injuries being the leading cause of admission in males (7.1%). After admissions for investigation and other health service related issues, asthma and then viral and other fevers were the third and fourth most important causes of admission in each sex.
- Females and males had similar discharge rates for most common respiratory, gastrointestinal and cerebrovascular diagnoses (Table B1). Rates of admission for injuries, fractures, alcoholic liver disease, myocardial infarction and other ischaemic heart disease were higher in males, but the rate of admission for urogenital conditions was highest in females.
- In infants and young children, the leading causes of admission were diarrhoea and gastroenteritis due to infection (9.3%), followed by respiratory tract infections and then viral and other infections. These accounted for more than half of all discharges (Table B2).
- In older adults aged 65 years and more, the leading cause of admission was asthma (8.3%), followed by hypertensive heart disease (6.7%), ischaemic heart disease other than myocardial infarction (6%) and cataracts (3%).

Lengths of stay

- The average length of stay for a hospital admission as estimated in PIHDS 2005 was 4.2, which is slightly lower than that reported in equivalent MOH statistics (Medical Statistics Unit, 2007). However, this difference may be due mostly to the fact that MOH statistics are based on complete statistical returns from all hospitals, whilst PIHDS is a sample survey, which was not completely representative of all institutions. It should be noted that average length of stay here has been computed so that a discharge on the day of admission is counted as a one day admission.
- Figure 3 shows the distribution in lengths of stay by number of days for all discharges, which reveals that most discharges (61%) take place on the day of admission or within the next two days. The median length of stay is 2 days, that is, the patient is discharged the day after admission. In comparison with other countries, these are relatively short average lengths of stay.
- Lengths of stay are similar in both sexes, except that they are modestly longer in females of reproductive age (15-44 years), and shorter in females over the age of 74 years (Table C1). Overall, there is little variation in length of stay by age, with short lengths of stay being predominant at all ages. The predominance and general nature of short 1-3 day admissions is clear in Table C2, which shows the 25th and 75th percentile range in hospital lengths of stay by age and sex, which reveals little variation from a range of 2 to 3 days.
- The variation in lengths of stay by primary diagnosis and sex for the commonest diagnoses is given in Table C4. For most diagnoses, the average length of stay is 3–5 days. Amongst the commonest diagnoses, schizophrenia (20.5 days), fractures (7.3), renal failure (6.6) and bronchitis and emphysema (5.9) are characterised by the longest stays. Consequently, certain diseases account for a much larger proportion of patient-days than they do admissions. In the case of schizophrenia, it accounts for 0.4% of discharges, but 2.0% of all patient days, whilst fractures account for 2.0% of discharges, but 3.6% of all patient days.
- For most primary diagnoses, there is little variation in lengths of stay across different levels of hospital, although in general lengths of stay increase with level of hospital, being highest in teaching hospitals. For example, in discharges for normal childbirth, asthma and hypertensive heart disease, lengths of stay do not differ greatly between teaching hospitals and rural hospitals (Table C3). However, in the more complex and more life-threatening diagnoses, where patient management is less straightforward or requires more specialist facilities, lengths of stay are much higher in teaching hospitals than in lower level institutions, for example acute myocardial infarction and fractures. This suggests that the longer lengths of stay in higher-level institutions reflect both differences in the disease profile of patients, as well as more complex cases of specific diagnoses. However, it may also be because patients admitted to higher-level institutions receive more comprehensive treatment than is possible or is customary in lower-level institutions. For example, an average length of stay of 1.3 days for admissions due to acute myocardial infarction at rural hospitals would not be long enough for adequate care to be given.

Inpatient prescribing

- An average of 4.0 medicines are prescribed or given to each inpatient. The frequencies of prescribing of the commonest medications are given in Table D1. Paracetamol is the most commonly prescribed medicine, and prescribed in 42% of all inpatients.
- After paracetamol, the most commonly prescribed medicines or formulations are famotidine 20 mg tablets (13.8 per 100 inpatient episodes), chlorpheniramine maleate 4 mg tablets (12.0), amoxicillin 500 mg capsules (11.7) and cloxacillin 250 mg capsules (8.7).
- Using the PIHDS data set it is possible also to look at prescribing patterns for the more common diagnoses (Table D2). For example, in admissions for asthma, most patients are treated with prednisolone, salbutamol and chlorpheniramine. Similarly, for cases of acute myocardial infarction, the most frequently prescribed medicines are isosorbide dinitrate, glyceryl trinitrate, captropril and aspirin.

International comparisons

- The rate of hospital admissions per 100 population in Sri Lanka (22.3) is relatively high in comparison with other countries, and comparable with the rates seen in the Organisation for Economic Co-operation and Development (OECD, 2008) economies with the highest rates of hospitalization (Figure 6).
- The average length of stay in Sri Lanka (4.2 days) is relatively short, and lower than in almost developed countries (Figure 7), but when examined in relation to specific diagnoses the lengths of stay are actually comparable to those in many developed countries (Table E1). However, there are significant differences in the rates of admission for specific diagnoses, with that for asthma being notably several times higher than in other countries, whilst rates of admission for non-communicable diseases such as acute myocardial infarction are lower.

Figure 1: Percent distribution of public hospital discharges and days of care by age, Sri Lanka 2005

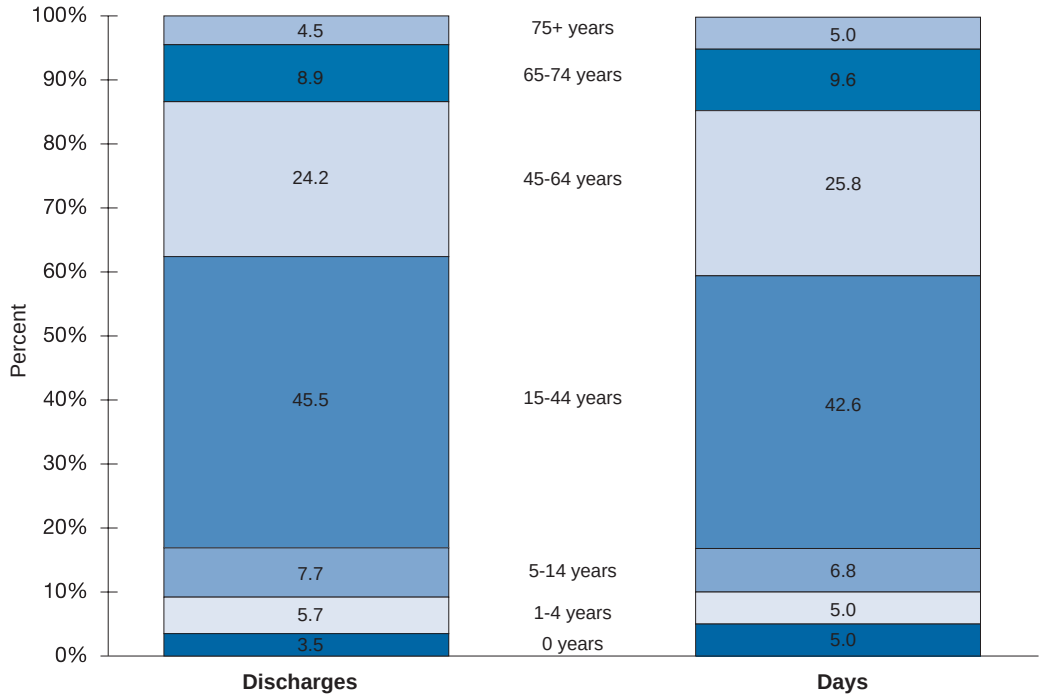


Figure 2: Annual rate of discharges from government hospitals by age group, Sri Lanka 2005

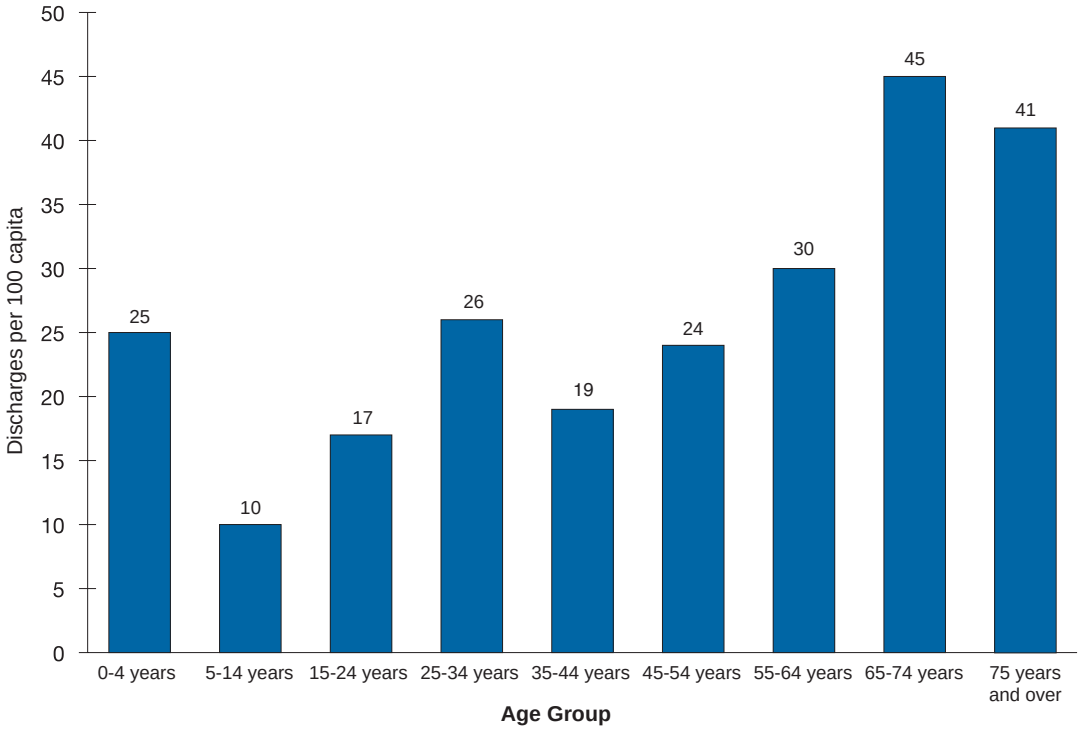


Figure 3: Percentage distribution of public hospital discharges by length of stay, Sri Lanka 2005

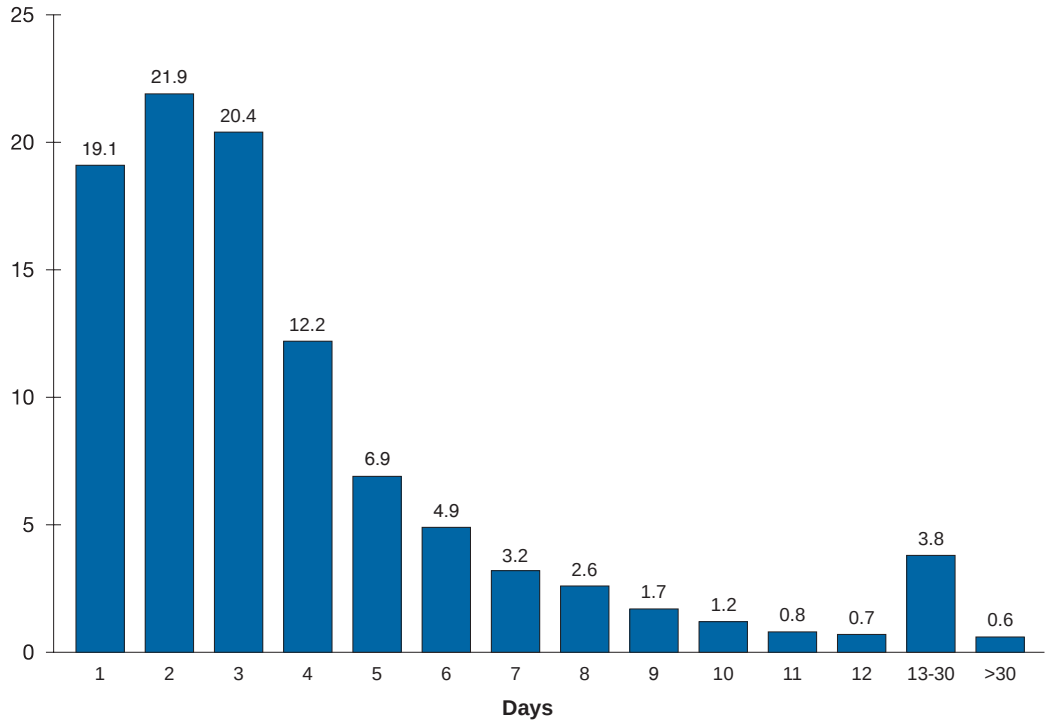
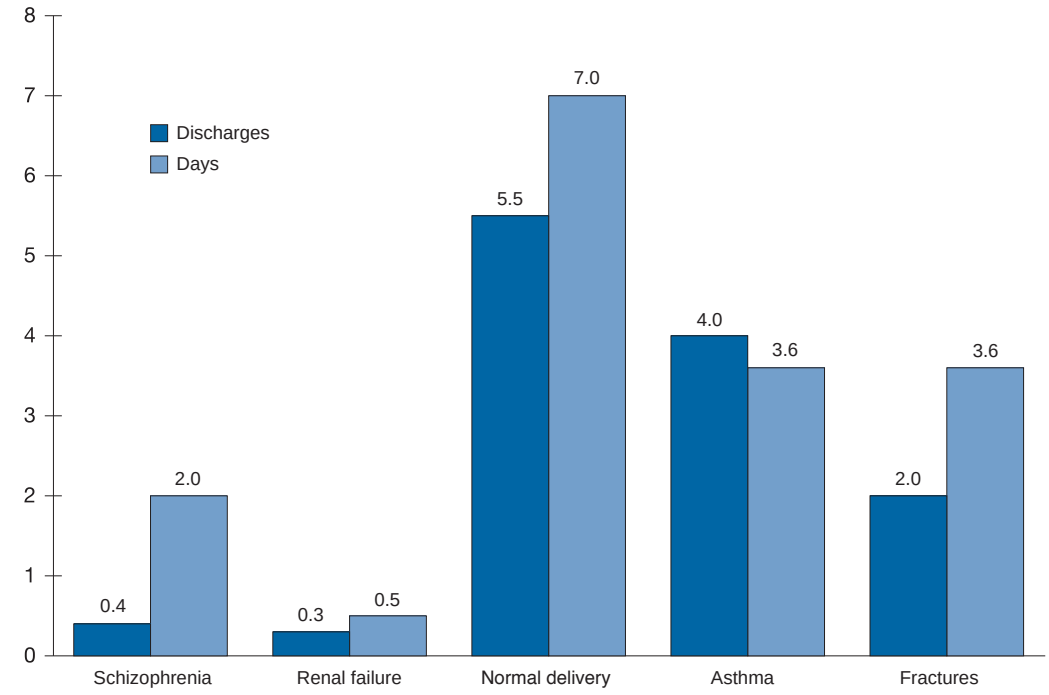


Figure 4: Percentages of all public hospital discharges and hospital days accounted for by selected leading causes of admission, Sri Lanka 2005



Introduction

Inpatient services account for a large proportion of overall activity and costs in public sector health services. The only routine statistics that are available on inpatient turnover have been restricted to data on the distribution of admissions by diagnosis, and variations in length of stay by level of hospital. These statistics are generated from the monthly indoor morbidity and mortality returns completed by all government hospitals. However, these statistics do not provide information on the distribution of actual patient-days by diagnosis and other patient and treatment characteristics. To fill this gap, the PHIDS 2005 was conducted to collect data on a representative sample of inpatient discharges. This report presents some key information obtained in the survey and the methods used. It provides information on the distribution of patient discharges and average length of stay by diagnosis, and age and sex of patients, and some information on the use of medicines.

A public use data file is being made available for download from the Institute for Health Policy (IHP) web site to enable further analyses by other researchers and analysts (see http://www.ihp.lk/data).

Methods

The PHIDS 2005 collected data from a sample of inpatient records acquired from a national sample of public hospitals. Persons with multiple discharges during the year may have been sampled more than once; thus, estimates are for discharges, not persons.

Sampling

The PHIDS extracted data from a sample of the bed-head tickets (BHTs) stored at government hospitals, using a three-stage stratified sampling design. BHTs are the paper record kept of every inpatient admission. The eligible universe of hospitals was those institutions admitting inpatients operated by the Ministry of Health (MOH) and Provincial Departments of Health (PDOH). The scope of the PHIDS excluded government hospitals operated by the Army, and Prisons and Police Departments.

Data were collected from two different samples of hospitals. The first sample of hospitals consisted of all those surveyed in the IHP-MOH Public Facility Survey (PFS) 2006. This was a Health Ministry-sponsored survey that was conducted by IHP using a stratified sample of hospital and non-hospital institutions in three districts to collect data on the costs and efficiency of Government healthcare facilities (Health Policy Research Associates 2007). By piggy-backing on the field operations for the PFS 2006, it was possible to substantially reduce the overall cost of data collection in the PHIDS. The second sample consisted of hospitals where MOH medical records officers (MROs) were employed.

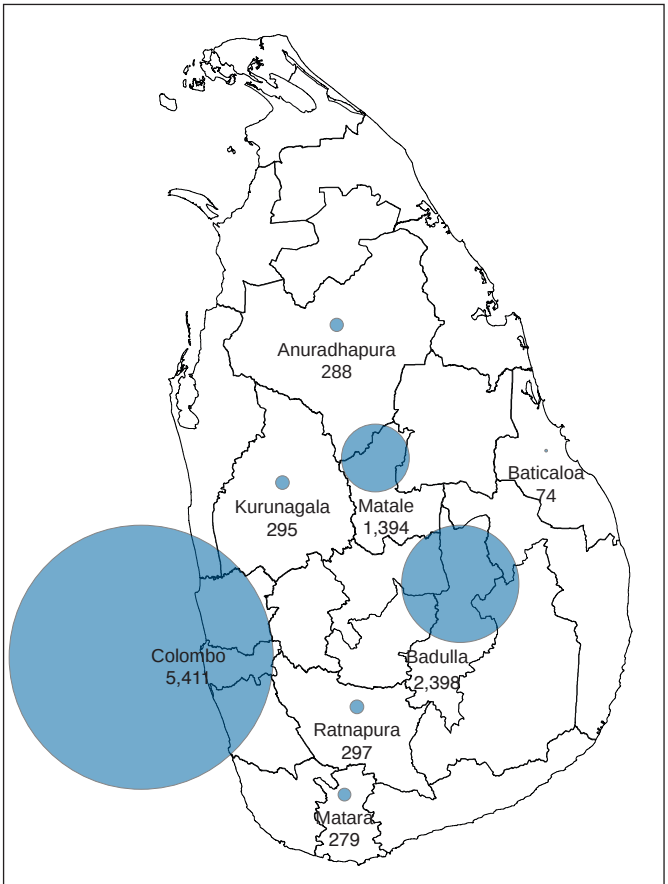
The first hospital sample consisted of 52 hospitals that were surveyed in the PFS 2006. The PFS hospital sample was a two-stage stratified sample of Government Hospitals in the island. In the PFS first stage, the MoH selected three districts: Colombo, Matale and Badulla. This selection was non-random, but the three districts were intended to represent different regions in the country. In the second stage of the PFS design, the public sector hospitals in each district were stratified into levels according to complexity and type. The largest and most specialised hospitals in the first two levels (teaching hospitals, provincial hospitals) were included with certainty (with the exception of the two mental hospitals in Colombo district of which only one was randomly selected) and the remaining hospitals selected by random sampling within each level. The second hospital sample consisted of all hospitals in other districts, where both MOH MROs were employed. These were selected as these MROs were supervised by one of the lead investigators (S. Senanayake) However, it was not possible to include the district of Jaffna owing to logistical difficulties, so ultimately five districts were included: Anuradhapura, Batticaloa, Kurunegela, Matara and Ratnapura (Table A1).

At the third stage, a sample of BHTs was selected using systematic random sampling at each hospital from those BHTs generated by patient discharges in 2005. The specific procedure for sampling varied according to the method of storage of BHTs at each hospital and was documented using Form A (Figure 8). In most hospitals, where the BHTs were stored in bundles according to date of discharge, a sample of bundles was first selected, and then a sample of BHTs selected within each bundle using systematic sampling.

Of the 53 hospitals in the original PFS listing, only one (Police Hospital, Colombo) was excluded, as it was not eligible for inclusion according to the scope of the survey. At the 52 hospitals that were sampled, there were no refusals to cooperate. In total, data were collected from 10,436 BHTs at 57 participating hospitals.

The distribution of the find sample of BHTs by district is shown in figure 5. As will be noted, the sample had to be re-weighted to compensate for its skewed geographical distribution.

Figure 5: Distribution of sampled discharges by district.



Note: Area of circles proportionate to size of sample.

Data extraction

Data were transcribed manually from each BHT to separate medical and drug abstract forms designed by IHP. The medical abstract (Figure 9) recorded most of the data, which included dates of admission and discharge, diagnosis, discharge status, age and sex of patient, whether any surgical operations were performed, what if any radiological investigations were conducted, and/or drugs were given. Only the primary diagnosis was recorded for each patient. This was usually recorded as a text entry, but in the case of those forms completed by MROs, the MOH IMMR (Indoor Morbidity and Mortality Return) code and or the WHO ICD-10 (International Classification of Diseases, 10th Revision) code were also entered. For those patients where drugs were given, these were transcribed to the drug abstract form, which recorded the names and quantity of each drug given.

In the case of tertiary and line ministry facilities, where ministry MROs worked, data extraction was performed by MROs. In all the other hospitals, IHP field investigators, who were either pre-intern medical or pharmacy graduates, did this. To preserve patient confidentiality, personal identification information such as names and addresses were not recorded.

Data entry

The abstracted data were coded and entered into electronic format using a specially designed data entry application built using MS Access and Java. This application contained a listing of all medical supplies in the inventory of the Medical Supplies Department, and each drug was entered with its relevant inventory serial number. If a drug was not listed in the inventory, it was entered after assigning a substitute number. All drugs were recorded using their generic names. With the exception of records where the MROs had already assigned an ICD-10 code, IHP staff coded the record diagnosis (and IMMR code where applicable) according to the WHO International Classification of Diseases, 10th Revision (WHO 2004).

During the data cleaning, if a MRO-recorded IMMR code was found not to be consistent with the text diagnosis or with the ICD-10 code that was also entered, it was corrected. Other aspects that were checked during the data cleaning included consistency and validity of the admission and discharge dates, plausibility of the length of stay, and consistency of ICD-10 codes with the recorded sex and age of the patient.

On completion of data cleaning, age and sex were missing in 4.4% and 1.2% of records respectively. This was primarily because of a failure to record the relevant data in the original BHT, or inability of the data abstractors to determine the sex of the patient from the recorded personal identification details. In 2 records the date of admission was missing and thus length of stay could not be computed.

Estimation

Owing to the complex multistage design of the PHIDS, the survey data must be inflated or weighted to produce and match the national estimates of patient discharges. The national aggregates of discharges from government hospitals were used for this purpose. These statistics were obtained from the MOH Medical Statistician in early 2007, in the form of a data file containing provisional 2005 aggregates of patient discharges by disease group, hospital type and district. Subsequently, these data were revised before publication in the Annual Health Statistics 2005. However, it should be noted that these data represent a small undercount of all discharges, as a few institutions were not included in the aggregate totals as noted in Annual Health Statistics 2005. The revised aggregates of patient discharges that were published in Annual Health Statistics 2005 (Medical Statistics Unit, 2007) have been used to reweight the final statistics presented here, to ensure consistency with the published statistics, although the major part of the analysis was done with the earlier provisional data file. It should be noted that the major differences between the provisional and final aggregates were that the final statistics comprise a more complete accounting of patient discharges in the eastern and northern provinces.

The estimation procedure has the objective of producing national estimates and has three successive steps:

- The first step involves inflation of the data for each facility by reciprocals of the probabilities of selection of individual BHTs at the relevant facility. The reciprocal was the ratio of reported discharges at that facility in 2005 to the total number of records in the sample for that facility.
- The second step involves inflation of the data for facilities according to the particular type of hospital that they represent. In doing this, the classification of facilities used by the MOH Medical Statistician in reporting inpatient admission statistics was used. For each hospital, the data were inflated by the reciprocals of the ratio of reported discharges in 2005 at the sampled facilities in that hospital class to the total number of discharges in 2005 in all facilities in that class reported to the Medical Statistician. This step has the effect of weighting the data to match the national distribution of discharges by facility type.
- The third step involves inflation of the adjusted data by the reciprocals of the ratio of the adjusted sampled patient discharges in a given disease group and facility class to the total number of discharges in 2005 in that same disease group and facility class as collated by the Medical Statistician. The disease grouping that was used was the categorisation that is used by the Medical Statistician to classify causes of admission when collating discharge data, which organises all IMMR and ICD-10 codes into 54 classes. These are referred to henceforth as MS codes. This third step has the effect of re-weighting the data to match the reported distribution of discharges by disease group at each facility type. In doing this, there were a small number of MS code and facility class combinations for which no admissions were recorded in the sample data. For these combinations, which represented 1.3% of all discharges reported to the Medical Statistician, dummy records with appropriate sampling weights were created in the sample data to represent these discharges. For these dummy records, the MS code was assigned, but no attempt was made to impute the ICD-10 distribution, or other patient characteristics.

Limitations of estimates

There are three major limitations in the estimates produced, which are largely the consequence of the limited resources that were available for the survey. The first is that it was not possible to collect data from lower-level facilities in the eastern, southern, north-central and northern areas of the country, as these were not covered in the PFS 2006. Collection of data from these areas would have substantially increased the travel costs. In these areas, which fall predominantly into the Dry Zone cli-

matic region of the country and which also include the conflict-affected areas of the island, there will be some differences in the overall patient treatment patterns. It should be noted that the process of weighting the data using the national distribution of discharges by MS code within each facility class, does have the effect of adjusting the data for any major differences in disease distribution that might exist between the sampled and non-sampled regions. Nevertheless, such weighting procedures can only provide a gross adjustment of the data, and to the extent that there may be differences in the treatment of patients in a particular disease group in different districts, these cannot be accounted for. The second limitation is that a significant number of patients do have more than one diagnosis or co-morbidity, but it was not possible to record more than the primary diagnosis for each patient, again for reasons for cost. The third is that the sample size of just over 10,000 discharges is too small to allow reliable estimates to be produced for infrequent diagnoses or groups of patients, in particular those which represent less than 0.5% of overall national discharges.

Explanatory notes to tables

The estimates presented in this report are based on the data collected in the PHIDS 2005. As sample survey estimates they are subject to both random sampling error, and also non-sampling error. The major non-sampling error will arise from the fact that the survey was not able to adequately cover all areas of the country. Other non-sampling errors include errors that may have arisen in coding diagnoses by ICD-10 code, or errors that occurred during data entry.

Because of low reliability, estimates, which are based on a sample of less than 30 patient records, are marked in the relevant tables by an asterisk to indicate that they are not considered precise estimates. The actual standard error for the estimates is not given because the survey's sampling design was complex and computation of the standard errors would require the use of specialised statistical software applications specifically designed for the purpose of computing survey variability, such as SUDAAN, which were not available to the study team. However, where the estimates are based on less than 30 records, the approximate standard error in the overall proportion of cases can be taken as being equivalent to be approximately 30 percent of the proportion shown (Kozak, DeFrances, and Hall 2006)

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List of detailed tables

Tables

Tables describing survey sample

Table A1: Number of institutions surveyed by hospital type and district, PHIDS 2005

Hospital type	Col	Bad	Mar	Bat	Kur	Anu	Mat	Rat	Total
Teaching hospitals	7	.	.	1	1	.	.	.	9
Provincial hospitals	.	1	1	.	.	1	.	1	4
Base hospitals	2	1	.	.	.	.	2	.	5
District hospitals	2	7	.	.	.	.	2	.	11
Peripheral units	3	1	.	.	.	.	4	.	8
Rural hospitals	1	7	.	.	.	.	5	.	13
Central dispensaries & maternity homes	.	1	.	.	.	.	.	.	1
Other hospitals	4	1	.	.	.	.	1	.	6
All hospitals	**19**	**19**	**1**	**1**	**1**	**1**	**14**	**1**	**57**

Notes:
1. Col – Colombo, Bad – Badulla, Mar - Matara, Bat – Batticaloa, Kur – Kurunegela, Anu – Anuradhapura, Mat - Matale, Rat – Ratnapura.
2. Teaching hospitals include De Soysa and Castle Street Hospitals for Women, Eye Hospital and Children's Hospital.
3. Other hospitals include Mental, Dental and Fever Hospitals, and Mental Rehabilitation hospitals.

Table A2: Number of patient discharges sampled by hospital type and district, PHIDS 2005

Hospital type	Col	Bad	Mar	Bat	Kur	Anu	Mat	Rat	Total
Teaching hospitals	3,472	.	.	74	295	.	.	.	3,841
Provincial hospitals	.	288	279	.	.	288	.	297	1,152
Base hospitals	521	333	.	.	.	.	392	.	1,246
District hospitals	191	943	.	.	.	.	217	.	1,351
Peripheral units	291	95	.	.	.	.	322	.	708
Rural hospitals	97	678	.	.	.	.	457	.	1,232
Central dispensaries & maternity homes	.	48	.	.	.	.	.	.	48
Other hospitals	839	13	.	.	.	.	6	.	858
All hospitals	**5,411**	**2,398**	**279**	**74**	**295**	**288**	**1,394**	**297**	**10,436**

Table A3: Number of patient discharges sampled by age and sex, PHIDS 2005

	Female		Male		Missing		Persons	
Age group	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
0 years	138	2.7	191	3.7	14	10.9	344	3.3
1-4 years	239	4.7	301	5.8	8	6.3	548	5.3
5-14 years	309	6.0	408	7.9	12	9.4	729	7.0
15-44 years	2,436	47.6	1,934	37.3	27	21.1	4,397	42.1
45-64 years	1,089	21.3	1,352	26.1	18	14.1	2,459	23.6
65-74 years	494	9.6	445	8.6	5	3.9	944	9.0
75 years and over	278	5.4	278	5.4	4	3.1	560	5.4
Missing	138	2.7	278	5.4	40	31.3	455	4.4
Total	**5,121**	**100**	**5,187**	**100**	**128**	**100**	**10,436**	**100**

Table A4: Number of patient discharges sampled by disease group, PHIDS 2005

Disease category (ICD-10 Codes)	Number	Percent (%)
Intestinal infectious diseases (A00-A09)	287	2.75
Viral diseases (A80-B34)	412	3.95
Malaria (B50-B54)	7	0.07
Other infectious and parastic diseases	24	0.23
Neoplasms (C00-D48)	419	4.01
Iron deficiency anaemias (D50)	14	0.13
Hematological conditions and other diseases of blood and ... (D51-D89)	47	0.45
Diabetes mellitus (E10-E14)	167	1.60
Other endocrine, nutrition and metabolic diseases (E00-E07,E15-E34,E58-E89)	57	0.55
Mental and behavioral disorders (F00-F99)	240	2.30
Diseases of the nervous system (G00-G98)	209	2.00
Diseases of the eye and adnexa	227	2.18
Disease and mastoid process of the ear.. (H60-H61,H65-H74,H80-H83,H90-H95)	50	0.48
Rheumatic fever and rheumatic heart disease (I00-I02,I05-I09)	14	0.13
Hypertensive diseases (I10-I15)	371	3.56
Ischemic heart disease (I20-I25)	86	0.82
Other heart diseases (I26-I51)	247	2.37
Cerebrovascular disease (I60-I69)	95	0.91
Other diseases of the circulatory system (I70-I84)	91	0.87
Influenza (J10-J11)	130	1.25
Pneumonia (J12-J18)	43	0.41
Other diseases of the upper respir. tract (J00-J06,J30-J39)	270	2.59
Diseases of the respiratory system excluding diseases of the upper respiratory tracts pneumonia and influenza (J20-J22, K40-J98)	784	7.51
Diseases of teeth and supporting structure (K00-K014)	95	0.91
Diseases of the gastrointestinal tract (K20-K92)	596	5.71
Diseases of skin ad subcutaneous tissue (L00-L08,L10-L98)	327	3.13
Disorders of the musculoskeletal system (M00-M99)	293	2.81
Diseases of the urinary system (N00-N39)	515	4.93
Diseases of the male genital organs (N40-N50)	66	0.63
Disorders of female genito-urinary system (N70-N98, N99.2, N99.3)	165	1.58
Abortions (O00-O08)	91	0.87
False labour and those admitted and discharged before delivery (O47)	4	0.04
Other obstetric conditions	275	2.64
Single spontaneous delivery (O80)	450	4.31
Slow fetal growth, fetal malnutrition and disorders related to short gestation and low birth weight not elsewhere classified (P05-P07)	19	0.18
Other conditions originating in the prenatal period	63	0.60
Congenital malformations deformations and chromosomal abnormalities (Q00-Q99)	77	0.74
Signs, symptoms and abnormal clinical findings (R00-R99)	927	8.88
Traumatic injuries (S00-T19)	1,382	13.24
Burns and corrosion (T20-T32)	38	0.36
Toxic effects of pesticides (T60.0,T60.1-T60.9)	48	0.46
Snake bites (T63.0)	16	0.15
Toxic effects of other substances other tha.. (T36-T59,T61-T62,T63.1-T65)	163	1.56
Effects of unspecified external causes, (T33-T35,T66-T79)	62	0.59
Complications of surgical and medical care, not elsewhere classified (T80-T88)	14	0.13
Persons encountering health services for examinations and investigation, specific procedures and health care (Z00-Z13,Z40-Z54)	345	3.31
Sterilizations (Z30.2)	13	0.12
Undiagnosed/Uncoded (245)	20	0.19
Helminthiases (B76,B77,B79,B80)	2	0.02
Malnutrition and vitamin deficiencies (E40-E46,E50-E56)	5	0.05
Sequelae of injuries, poisoning and of other consequences of external causes (T90-T98)	8	0.08
Tuberculosis (A15-A18)	36	0.34
Other bacterial diseases (A20-A49)	30	0.29
Infections with sexual mode of transmission (A50-A64)	-	0.00
Total	**10,436**	**100**

Tables presenting estimated patient characteristics

Table B1: Number of patient discharges from public hospitals by commonest primary diagnoses and sex, Sri Lanka 2005 estimates

IMMR group	Disease category	Female		Male		Persons	
		Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
195	Single spontaneous delivery (O80)	240,096	11.0	.	.	240,096	5.5
230	Other injuries of specified , unspecified and multiple body organs (S09,S16,S19,S29, S39,S49,S59,S69,S79,S89,S99)	57,915	2.7	153,230	7.1	211,145	4.9
243	Persons encountering health services for examination, investigation, etc. (Z00-13,Z40-54)	103,769	4.8	77,829	3.6	181,598	4.2
150	Asthma (J45-J46)	89,777	4.1	84,253	3.9	174,031	4.0
34	Other arthropod-borne viral fever and haem. fever (A92-94, A96-99)	56,944	2.6	78,529	3.6	135,473	3.1
6	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	64,066	2.9	55,786	2.6	119,852	2.8
152	Other diseases of the respiratory system (J22,J60-J98)	59,628	2.7	59,647	2.8	119,275	2.7
227	Open wounds and injuries to blood vessels (S01,S11,S15,S21,S25,S31,S35,S41, S51,S61,S71,S81,S91,S45,S55,S65,S75,S85,S95)	33,143	1.5	78,022	3.6	111,164	2.6
196	Other complications of pregnancy/delivery (O20-29,O60-63,O67-71,O73-75,O81-84)	100,910	4.6	.	.	100,910	2.3
217	Other signs and symptoms and abnormal clinical findings (R25-49,R52-53,R55,R57-69)	46,788	2.1	51,694	2.4	98,482	2.3
221	Fractures (S02,S12,S22,S32,S42,S52,S62,S72,S82,S92,T02,T08,T10,T12,T14.2)	25,755	1.2	61,683	2.8	87,439	2.0
156	Gastritis and duodenitis (K29)	38,282	1.8	45,074	2.1	83,356	1.9
126	Hypertensive heart disease (I11)	46,491	2.1	31,670	1.5	78,162	1.8
180	Other diseases of the urinary system (N13-N15,N25-28,N30-39,N99.0,N99.1,N99.4,N99,5)	40,994	1.9	36,014	1.7	77,007	1.8
143	Other acute respiratory infections (J00,J02,J04-06)	34,510	1.6	40,977	1.9	75,487	1.7
167	Infections of skin and subcutaneous tissue (L00-L08)	28,049	1.3	47,375	2.2	75,425	1.7
186	Other disorders of the female genito-urinary system (N71-N80,N82-N98,N99.2,N99.3)	68,993	3.2	.	.	68,993	1.6
129	Other ischemia heart disease (I20,I23-I25)	20,633	0.9	48,209	2.2	68,842	1.6
220	Superfic. injury (S00,S10,S20,S30,S40,S50,S60,S70,S80,S90,T00,T09.0,T11.0,T13, T14)	21,043	1.0	46,954	2.2	67,997	1.6
211	Symptoms and signs involving the digestive system (R10-R19)	35,031	1.6	31,665	1.5	66,696	1.5
42	Other viral diseases (inc. viral fever) (A81,A88-89,B00,B03,B04,B07-09,B25,B27-34)	23,897	1.1	36,741	1.7	60,638	1.4
210	Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	27,161	1.2	32,949	1.5	60,110	1.4
172	Soft tissue disorders (M60-M79)	25,620	1.2	32,290	1.5	57,911	1.3
168	Other diseases of skin and subcutaneous tissue (L10-L98)	20,234	0.9	28,983	1.3	49,217	1.1
187	Abortions (O00-O08)	46,347	2.1	.	.	46,347	1.1
115	Cataract and other disorders of lens (H25-H27)	21,531	1.0	16,668	0.8	38,198	0.9
090E	Unspecified diabetes mellitus (E14)	21,746	1.0	12,683	0.6	34,429	0.8
174	Other disorders of musculoskeletal systems (M40-M54, M80-85,M87,M90)	14,841	0.7	18,703	0.9	33,544	0.8
229	Bitten or struck by a dog (W54)	13,991	0.6	17,880	0.8	31,871	0.7
238	Toxic effects of other substances chiefly non-medic. etc (T51-59,T61,T63.1-63.9,T64-65)	9,693	0.4	19,103	0.9	28,796	0.7
178	Urolithiasis (N22-N23)	7,231	0.3	20,738	1.0	27,970	0.6
149	Bronchitis, emphysema and other chronic obstructive pulmonary disease (J40-J44)	6,410	0.3	20,579	0.9	26,988	0.6
161	Other diseases of intestines and peritoneum (K55-K66)	9,356	0.4	15,045	0.7	24,401	0.6
119	Other diseases of the eye and adnexa (H00-11,H20-21,H30-31,H34-35,H43-48,H51-59)	10,047	0.5	13,573	0.6	23,620	0.5
134	Cerebrovascular disease (I60-I69)	8,761	0.4	13,729	0.6	22,490	0.5
108	Epilepsy (G40-G41)	8,268	0.4	12,409	0.6	20,678	0.5
159	Hernia (K40-K46)	6,375	0.3	13,647	0.6	20,022	0.5
160	Non infective enteritis and colitis (K50-K52)	9,739	0.4	9,921	0.5	19,659	0.5
162	Alcoholic liver disease (K70)	130	0.0	17,421	0.8	17,552	0.4
213	Fever of unknown origin (R50)	7,540	0.3	9,629	0.4	17,170	0.4
97	Schizophrenia, schizotypal and delusional orders (F20-F29)	8,904	0.4	8,151	0.4	17,055	0.4
130	Pulmonary embolism (I26)	8,166	0.4	6,463	0.3	14,629	0.3
177	Renal failure (N17-N19)	5,581	0.3	8,931	0.4	14,512	0.3
128	Acute myocardial infarction (I21,I22)	3,595	0.2	10,032	0.5	13,627	0.3
133	Other heart diseases (I27.0-I27.8,I28-I49,I51)	8,003	0.4	4,917	0.2	12,920	0.3
153	Diseases of teeth and supporting structure (K00-K08)	3,574	0.2	6,078	0.3	9,652	0.2
35	Varicella (Chickenpox) (B01)	2,333	0.1	3,959	0.2	6,291	0.1
144	Influenza (J10,J11)	1,508	0.1	1,100	0.1	2,608	0.1
	Other diagnoses	624,886	28.7	725,647	33.5	1,350,531	31.1
	Total	**2,178,286**	**100**	**2,166,579**	**100**	**4,344,864**	**100**
	Percentage (%)	*50%*		*50%*		*100%*	

Table B2: Number of patient discharges from public hospitals by commonest primary diagnoses and age, Sri Lanka 2005 estimates

IMMR group	Disease category	0-4 years		5-14 years		15-44 years	
		Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
195	Single spontaneous delivery (O80)	.	.	.	.	238,194	12.0
230	Other injuries of specified , unspecified and multiple body organs .. (S09,S16,S19,S29, S39,S49,S59,S69,S79,S89,S99)	14,342	3.6	22,271	6.7	123,642	6.3
243	Persons encountering health services for examination, investigation, etc. ..... (Z00-13,Z40-54)	25,988	6.5	19,957	6.0	69,407	3.5
150	Asthma (J45-J46)	14,065	3.5	18,105	5.4	35,288	1.8
34	Other arthropod-borne viral fever and haem. fever (A92-94, A96-99)	18,690	4.6	17,466	5.2	65,367	3.3
6	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	37,306	9.3	14,686	4.4	33,807	1.7
152	Other diseases of the respiratory system (J22,J60-J98)	32,569	8.1	17,631	5.3	27,338	1.4
227	Open wounds and injuries to blood vessels (S01,S11,S15,S21,S25,S31,S35,S41,S51, S61,S71,S81,S91,S45,S55,S65,S75,S85,S95)	7,782	1.9	18,446	5.5	58,693	3.0
196	Other complications of pregnancy/delivery ...(O20-29,O60-63,O67-71,O73-75,O81-84)	.	.	.	.	100,498	5.1
217	Other signs and symptoms and abnormal clinical findings (R25-49,R52-53,R55,R57-69)	12,000	3.0	5,372	1.6	39,017	2.0
221	Fractures .....(S02,S12,S22,S32,S42,S52,S62,S72,S82,S92,T02,T08,T10,T12,T14.2)	4,297	1.1	15,778	4.7	38,010	1.9
156	Gastritis and duodenitis (K29)	1,928	0.5	2,190	0.7	47,568	2.4
180	Other diseases of the urinary system (N13-N15,N25-28,N30-39,N99.0,N99.1,N99.4,N99,5)	7,687	1.9	4,024	1.2	40,704	2.1
126	Hypertensive heart disease (I11)	.	.	.	.	11,033	0.6
143	Other acute respiratory infections (J00,J02,J04-06)	29,736	7.4	12,067	3.6	21,924	1.1
167	Infections of skin and subcutaneous tissue (L00-L08)	3,969	1.0	9,899	3.0	27,890	1.4
186	Other disorders of the female genito-urinary system (N71-N80,N82-N98,N99.2,N99.3)	1,619	0.4	.	.	43,882	2.2
129	Other ischemic heart disease (I20,I23-I25)	.	.	.	.	11,266	0.6
220	Superfic. injury .. (S00,S10,S20,S30,S40,S50,S60,S70,S80,S90,T00,T09.0,T11.0,T13, T14)	3,851	1.0	4,375	1.3	40,260	2.0
211	Symptoms and signs involving the digestive system (R10-R19)	5,411	1.3	6,973	2.1	37,004	1.9
210	Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	6,005	1.5	1,982	0.6	25,198	1.3
172	Soft tissue disorders (M60-M79)	74	0.0	5,531	1.7	29,142	1.5
42	Other viral diseases (inc. viral fever) ..(A81,A88-89,B00,B03,B04,B07-09,B25,B27-34)	9,019	2.2	8,371	2.5	31,035	1.6
168	Other diseases of skin and subcutaneous tissue (L10-L98)	6,452	1.6	5,332	1.6	19,073	1.0
187	Abortions (O00-O08)	.	.	.	.	45,383	2.3
115	Cataract and other disorders of lens (H25-H27)	.	.	576	0.2	3,319	0.2
090E	Unspecified diabetes mellitus (E14)	.	.	308	0.1	4,708	0.2
174	Other disorders of musculoskeletal systems (M40-M54, M80-85,M87,M90)	.	.	513	0.2	13,533	0.7
229	Bitten or struck by a dog (W54)	1,069	0.3	8,168	2.5	16,158	0.8
238	Toxic effects of other substances chiefly non-medic. etc. (T51-59,T61,T63.1-63.9,T64-65)	3,960	1.0	2,531	0.8	16,577	0.8
178	Urolithiasis (N22-N23)	.	.	769	0.2	16,195	0.8
149	Bronchitis, emphysema and other chronic obstructive pulmonary disease .....(J40-J44)	.	.	.	.	3,913	0.2
161	Other diseases of intestines and peritoneum (K55-K66)	3,241	0.8	1,500	0.5	7,943	0.4
119	Other diseases of the eye and adnexa (H00-11,H20-21,H30-31,H34-35,H43-48,H51-59)	1,285	0.3	1,505	0.5	12,210	0.6
134	Cerebrovascular disease (I60-I69)	.	.	695	0.2	3,822	0.2
160	Non infective enteritis and colitis (K50-K52)	6,032	1.5	3,072	0.9	7,366	0.4
159	Hernia (K4*0-K46)	778	0.2	842	0.3	8,110	0.4
108	Epilepsy (G40-G41)	2,578	0.6	4,041	1.2	7,934	0.4
213	Fever of unknown origin (R50)	3,447	0.9	2,872	0.9	8,353	0.4
97	Schizophrenia, schizotypal and delusional orders (F20-F29)	.	.	.	.	10,561	0.5
162	Alcoholic liver disease (K70)	.	.	.	.	6,686	0.3
130	Pulmonary embolism (I26)	.	.	.	.	1,183	0.1
177	Renal failure (N17-N19)	.	.	.	.	3,180	0.2
133	Other heart diseases (I27.0-I27.8,I28-I49,I51)	630	0.2	1,151	0.3	2,802	0.1
128	Acute myocardial infarction (I21,I22)	273	0.1	.	.	1,774	0.1
153	Diseases of teeth and supporting structure (K00-K08)	444	0.1	1,796	0.5	6,290	0.3
35	Varicella (Chickenpox) (B01)	262	0.1	197	0.1	3,099	0.2
144	Influenza (J10,J11)	221	0.1	86	0.0	916	0.0
	Other diagnoses	134,974	33.6	92,078	27.6	549,686	27.8
	Total	**401,984**	**100**	**333,156**	**100**	**1,976,940**	**100**
	Percentage (%)	*9.3%*		*7.7%*		*45.5%*	

Table B2 (continued): Number of patient discharges from public hospitals by commonest primary diagnoses and age, Sri Lanka 2005 estimates

IMMR group	Disease category	45-64 years		65 years and over		All ages	
		Number	Percent (%)	Number	Percent (%)	Number	Percent (%)
195	Single spontaneous delivery (O80)	1,902	0.2	.	.	240,096	5.5
230	Other injuries of specified , unspecified and multiple body organs (S09,S16,S19,S29, S39,S49,S59,S69,S79,S89,S99)	40,985	3.9	7,870	1.4	209,110	4.8
243	Persons encountering health services for examination, investigation, etc. (Z00-13,Z40-54)	45,540	4.3	20,706	3.6	181,598	4.2
150	Asthma (J45-J46)	59,354	5.6	47,937	8.3	174,749	4.0
34	Other arthropod-borne viral fever and haem. fever (A92-94, A96-99)	27,034	2.6	12,144	2.1	140,702	3.2
6	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	23,887	2.3	11,465	2.0	121,152	2.8
152	Other diseases of the respiratory system (J22,J60-J98)	21,547	2.0	20,994	3.6	120,078	2.8
227	Open wounds and injuries to blood vessels (S01,S11,S15,S21,S25,S31,S35,S41,S51, S61,S71,S81,S91,S45,S55,S65,S75,S85,S95)	16,922	1.6	11,957	2.1	113,800	2.6
196	Other complications of pregnancy/delivery (O20-29,O60-63,O67-71,O73-75,O81-84)	.	.	408	0.1	100,906	2.3
217	Other signs and symptoms and abnormal clinical findings (R25-49,R52-53,R55,R57-69)	20,397	1.9	19,806	3.4	96,593	2.2
221	Fractures (S02,S12,S22,S32,S42,S52,S62,S72,S82,S92,T02,T08,T10,T12,T14.2)	18,993	1.8	9,923	1.7	87,001	2.0
156	Gastritis and duodenitis (K29)	22,521	2.1	11,412	2.0	85,620	2.0
180	Other diseases of the urinary system (N13-N15,N25-28,N30-39,N99.0,N99.1,N99.4,N99,5)	19,845	1.9	7,272	1.3	79,531	1.8
126	Hypertensive heart disease (I11)	29,247	2.8	39,014	6.7	79,294	1.8
143	Other acute respiratory infections (J00,J02,J04-06)	7,775	0.7	4,060	0.7	75,561	1.7
167	Infections of skin and subcutaneous tissue (L00-L08)	22,696	2.2	10,901	1.9	75,353	1.7
186	Other disorders of the female genito-urinary system (N71-N80,N82-N98,N99.2,N99.3)	19,556	1.9	3,802	0.7	68,859	1.6
129	Other ischemic heart disease (I20,I23-I25)	26,579	2.5	30,997	5.3	68,842	1.6
220	Superfic. injury (S00,S10,S20,S30,S40,S50,S60,S70,S80,S90,T00,T09.0,T11.0,T13, T14)	15,772	1.5	4,493	0.8	68,752	1.6
211	Symptoms and signs involving the digestive system (R10-R19)	12,067	1.1	6,609	1.1	68,064	1.6
210	Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	18,871	1.8	8,653	1.5	60,708	1.4
172	Soft tissue disorders (M60-M79)	14,208	1.4	8,577	1.5	57,532	1.3
42	Other viral diseases (inc. viral fever) (A81,A88-89,B00,B03,B04,B07-09,B25,B27-34)	5,129	0.5	768	0.1	54,322	1.3
168	Other diseases of skin and subcutaneous tissue (L10-L98)	12,581	1.2	5,850	1.0	49,289	1.1
187	Abortions (O00-O08)	965	0.1	.	.	46,347	1.1
115	Cataract and other disorders of lens (H25-H27)	14,356	1.4	19,677	3.4	37,928	0.9
090E	Unspecified diabetes mellitus (E14)	18,209	1.7	12,281	2.1	35,506	0.8
174	Other disorders of musculoskeletal systems (M40-M54, M80-85,M87,M90)	13,462	1.3	6,130	1.1	33,638	0.8
229	Bitten or struck by a dog (W54)	4,272	0.4	2,058	0.4	31,726	
238	Toxic effects of other substances chiefly non-medic. etc. (T51-59,T61,T63.1-63.9,T64-65)	3,761	0.4	1,686	0.3	28,515	0.7
178	Urolithiasis (N22-N23)	8,380	0.8	1,204	0.2	26,549	0.6
149	Bronchitis, emphysema and other chronic obstructive pulmonary disease (J40-J44)	11,590	1.1	10,130	1.7	25,633	0.6
161	Other diseases of intestines and peritoneum (K55-K66)	5,658	0.5	6,239	1.1	24,581	0.6
119	Other diseases of the eye and adnexa (H00-11,H20-21,H30-31,H34-35,H43-48,H51-59)	4,051	0.4	4,944	0.9	23,995	0.6
134	Cerebrovascular disease (I60-I69)	8,539	0.8	9,434	1.6	22,490	0.5
160	Non infective enteritis and colitis (K50-K52)	2,743	0.3	1,407	0.2	20,620	0.5
159	Hernia (K40-K46)	5,682	0.5	4,781	0.8	20,193	0.5
108	Epilepsy (G40-G41)	3,790	0.4	1,530	0.3	19,872	0.5
213	Fever of unknown origin (R50)	1,904	0.2	933	0.2	17,509	0.4
97	Schizophrenia, schizotypal and delusional orders (F20-F29)	4,483	0.4	638	0.1	15,683	0.4
162	Alcoholic liver disease (K70)	7,954	0.8	495	0.1	15,135	0.3
130	Pulmonary embolism (I26)	6,643	0.6	7,148	1.2	14,974	0.3
177	Renal failure (N17-N19)	7,153	0.7	3,352	0.6	13,686	0.3
133	Other heart diseases (I27.0-I27.8,I28-I49,I51)	2,843	0.3	5,316	0.9	12,742	0.3
128	Acute myocardial infarction (I21,I22)	6,350	0.6	3,943	0.7	12,340	0.3
153	Diseases of teeth and supporting structure (K00-K08)	719	0.1	257	0.0	9,507	0.2
35	Varicella (Chickenpox) (B01)	2,577	0.2	262	0.0	6,398	0.1
144	Influenza (J10,J11)	708	0.1	678	0.1	2,608	0.1
	Other diagnoses	402,148	38.2	170,294	29.3	1,349,181	31.1
	Total	**1,052,350**	**100**	**580,434**	**100**	**4,344,864**	**100**
	Percentage (%)	*24.2%*		*13.4%*		*100.0%*	

Note: Diagnoses ranked in descending order of estimated frequency. IMMR groups are those used in the Inpatient Morbidity and Mortality Returns of government hospitals. ICD-10 codes included in each IMMR group are indicated in parentheses.

Table B3: Distribution of patient discharges by different levels of public hospitals for selected common diagnoses, Sri Lanka 2005 estimates

IMMR group	Primary diagnosis	Teaching hospitals	Provincial hospitals	Base hospitals	District hospitals	PUs & RHs	Others	Total
		Admissions	Admissions	Admissions	Admissions	Admissions	Admissions	Admissions
128	Acute myocardial infarction	18%	15%	39%	19%	9%	0%	100%
150	Asthma	13%	4%	22%	35%	25%	1%	100%
149	Bronchitis, emphysema, etc.	16%	14%	21%	34%	13%	3%	100%
134	Cerebrovascular disease	34%	15%	23%	18%	10%	0%	100%
221	Fractures	56%	23%	10%	7%	3%	1%	100%
156	Gastritis and duodenitis	11%	7%	20%	36%	26%	0%	100%
126	Hypertensive heart disease	14%	6%	20%	36%	23%	1%	100%
143	Other acute respiratory infections	10%	4%	25%	33%	27%	0%	100%
196	Other complications of pregnancy	31%	18%	26%	16%	9%	0%	100%
152	Other diseases of the respiratory system	16%	10%	21%	27%	26%	0%	100%
230	Other injuries of specified , etc.	13%	9%	21%	36%	21%	0%	100%
129	Other ischemic heart disease	29%	13%	28%	18%	11%	0%	100%
243	Persons encountering health services, etc.	40%	22%	31%	3%	1%	3%	100%
195	Single spontaneous delivery	30%	17%	35%	13%	5%	0%	100%
090E	Unspecified diabetes mellitus	27%	6%	25%	28%	12%	1%	100%
	Others	31%	12%	24%	18%	12%	4%	100%
	Total	**28%**	**12%**	**24%**	**20%**	**13%**	**3%**	**100%**

Tables presenting lengths of stay

Table C1: Average length of stay for patient discharges from public hospitals by age and sex, Sri Lanka 2005 estimates

Sex	0 years	1-4 years	5-14 years	15-44 years	45-64 years	65-74 years	75 years and above	All ages
	Days	Days	Days	Days	Days	Days	Days	Days
Female	5.7	3.7	3.7	4.3	4.8	4.4	4.4	4.4
Male	5.6	3.7	3.8	3.5	4.4	4.9	5.1	4.1
All	5.6	3.7	3.8	4.0	4.5	4.7	4.7	4.2

Table C2: Length of stay for patient discharges from public hospitals by age and sex - 25th to 75th percentile range, Sri Lanka 2005 estimates

Sex	0 years	1-4 years	5-14 years	15-44 years	45-64 years	65-74 years	75 years and above	All ages
	Days	Days	Days	Days	Days	Days	Days	Days
Female	2 – 3	2 – 3	2 – 3	1 – 2	1 – 3	2 – 3	2 – 4	2 – 3
Male	3 – 4	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3
All	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3	2 – 3

Table C3: Average length of stay for patient discharges at different levels of public hospitals for selected common diagnoses, Sri Lanka 2005 estimates

IMMR group	Primary diagnosis	Teaching hospitals	Base hospitals	District hospitals	Rural hospitals
		Days	Days	Days	Days
6	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	4.0	3.0	2.9	2.5
108	Cerebrovascular disease (I60-I69)	4.4	2.5	3.2	1.7
126	Hypertensive heart disease (I11)	4.7	3.2	3.4	4.6
128	Acute myocardial infarction (I21,I22)	6.1	4.6	2.2	1.3
150	Asthma (J45-J46)	4.3	3.1	4.1	3.4
187	Fractures (S02,S12,S22,S32,S42,S52,S62,S72,S82,S92,T02,T08,T10,T12,T14.2)	4.4	5.1	2.1	1.2
195	Single spontaneous delivery (O80)	5.6	5.5	3.7	5.2

Table C4: Average length of stay and patient days for patient discharges from public hospitals by sex for commonest primary diagnoses, Sri Lanka 2005 estimates

IMMR group	Primary diagnosis	Female ALOS	Male ALOS	All persons ALOS	All persons Days (%)
6	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	3.1	3.0	3.1	2.1
34	Other arthropod-borne viral fever and haem. fever (A92-94, A96-99)	3.0	2.8	2.9	2.2
35	Varicella (Chickenpox) (B01)	4.3	4.1	4.2	0.1
42	Other viral diseases (inc. viral fever) (A81,A88-89,B00,B03,B04,B07-09,B25,B27-34)	3.3	3.6	3.5	1.2
090E	Unspecified diabetes mellitus (E14)	5.4	5.6	5.5	1.1
97	Schizophrenia, schizotypal and delusional orders (F20-F29)	22.5	18.3	20.5	2.0
108	Epilepsy (G40-G41)	3.0	3.1	3.1	0.4
115	Cataract and other disorders of lens (H25-H27)	4.3	4.4	4.3	0.9
119	Other diseases of the eye and adnexa (H00-11,H20-21,H30-31,H34-35,H43-48,H51-59)	2.4	3.9	3.3	0.4
126	Hypertensive heart disease (I11)	3.7	4.2	3.9	1.7
128	Acute myocardial infarction (I21,I22)	3.9	4.5	4.3	0.3
129	Other ischemic heart disease (I20,I23-I25)	3.1	3.2	3.2	1.2
130	Pulmonary embolism (I26)	4.6	4.4	4.5	0.4
133	Other heart diseases (I27.0-I27.8,I28-I49,I51)	5.3	5.1	5.2	0.4
134	Cerebrovascular disease (I60-I69)	5.2	5.1	5.1	0.6
143	Other acute respiratory infections (J00,J02,J04-06)	3.5	3.4	3.5	1.5
144	Influenza (J10,J11)	4.0	3.3	3.7	0.1
149	Bronchitis, emphysema and other chronic obstructive pulmonary disease (J40-J44)	4.4	6.3	5.9	0.9
150	Asthma (J45-J46)	3.4	4.0	3.7	3.6
152	Other diseases of the respiratory system (J22,J60-J98)	3.9	4.0	4.0	2.6
153	Diseases of teeth and supporting structure (K00-K08)	3.7	3.6	3.7	0.2
156	Gastritis and duodenitis (K29)	2.9	3.5	3.2	1.5
159	Hernia (K40-K46)	6.5	3.4	4.4	0.5
160	Non infective enteritis and colitis (K50-K52)	3.2	2.8	3.0	0.3
161	Other diseases of intestines and peritoneum (K55-K66)	4.2	3.7	3.9	0.5
162	Alcoholic liver disease (K70)	3.0	4.5	4.5	0.4
167	Infections of skin and subcutaneous tissue (L00-L08)	4.2	5.2	4.8	2.0
168	Other diseases of skin and subcutaneous tissue (L10-L98)	3.5	3.9	3.8	1.0
172	Soft tissue disorders (M60-M79)	3.6	4.2	3.9	1.3
174	Other disorders of musculoskeletal systems (M40-M54, M80-85,M87,M90)	3.7	4.1	3.9	0.7
177	Renal failure (N17-N19)	5.4	7.4	6.6	0.5
178	Urolithiasis (N22-N23)	3.2	3.3	3.3	0.5
180	Other diseases of the urinary system (N13-N15,N25-28,N30-39,N99.0,N99.1,N99.4,N99,5)	3.8	3.8	3.8	1.6
186	Other disorders of the female genito-urinary system (N71-N80,N82-N98,N99.2,N99.3)	4.3	.	4.3	1.7
187	Abortions (O00-O08)	4.0	.	4.0	1.0
195	Single spontaneous delivery (O80)	5.1	.	5.1	7.0
196	Other complications of pregnancy/delivery (O20-29,O60-63,O67-71,O73-75,O81-84)	4.4	.	4.4	2.5
210	Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	2.9	3.2	3.1	1.0
211	Symptoms and signs involving the digestive system (R10-R19)	3.9	2.6	3.3	1.2
213	Fever of unknown origin (R50)	3.8	5.2	4.6	0.4
217	Other signs and symptoms and abnormal clinical findings (R25-49,R52-53,R55,R57-69)	3.0	4.4	3.8	2.1
220	Superfic. injury (S00,S10,S20,S30,S40,S50,S60,S70,S80,S90,T00,T09.0,T11.0, etc)	2.3	2.9	2.7	1.0
221	Fractures (S02,S12,S22,S32,S42,S52,S62,S72,S82,S92,T02,T08,T10,T12,T14.2)	8.4	6.8	7.3	3.6
227	Open wounds and injuries to blood vessels (S01,S11,S15,S21,S25,S31,S35,S41, etc.)	3.9	5.2	4.8	3.0
229	Bitten or struck by a dog (W54)	1.2	1.8	1.5	0.3
230	Other injuries of specified , unspecified and multiple body organs (S09,S16,S19,S29, etc.)	2.6	2.4	2.5	2.9
238	Toxic effects of other substances chiefly non-medic. etc. (T51-59,T61,T63.1-63.9,T64-65)	2.6	2.6	2.6	0.4
243	Persons encountering health services for examination, investigation, etc. (Z00-13,Z40-54)	3.7	3.4	3.6	3.7
	Other diagnoses	5.3	4.9	5.1	33.3
					-
	Total	**4.4**	**4.2**	**4.3**	**100.0**

Table D1: Most frequent medicine formulations prescribed to inpatients in public hospitals, Sri Lanka 2005

Medicine formulation	Times prescribed per 100 inpatient episodes
Paracetamol Tablet 500mg	41.6
Famotidine Tablet 20mg	13.8
Chlorpheniramine maleate Tablet 4mg	12.0
Amoxycillin capsule 500mg	11.7
Sodium chloride Injection 0.9% in 500ml Bottle	10.9
Cloxacillin Capsules 250mg	8.7
Metoclopramide Tablet 10mg	8.2
Dextrose 5% 500ml Bottle	7.6
Prednisolone Tablet 5mg	7.3
Salbutamol respiratory solution 0.5% in 10ml Bottle	7.1
Diclofenac sodium Tablet 50mg	6.8
Vitamin B complex Tablet	6.2
Ampicillin Injection 500mg Vial	6.0
Salbutamol Tablet 2mg	5.9
Metronidazole Injection 500mg in 100ml Bottle	5.2
Omeprasole Capsule 20mg	5.0
Isosorbide dinitrate Tablet 10mg	4.9
Ibuprofen Tablet 200mg	4.7
Metronidazole Tablet 400 mg	4.6
Folic acid Tablet 5mg	4.6
Vitamin C Tablet 100mg	4.3
Cefuroxime Injection 750mg Vial	4.1
Salbutamol Tablet 4mg	4.0
Diazepam Tablet 5mg	3.9
Captopril Tablet 25mg	3.8
Tetanus toxoide Vaccine 0.5ml Ampoule (single dose	3.6
Cloxacillin Injection 500mg Vial	3.6
Nifedipine Slow Release Tablet 20mg	3.3
Theophylline Tablet 125mg	3.2
Frusemide Tablet 40 mg	3.2
Aluminium hydroxide Tablet 500mg	3.1
Aspirin Tablet 150mg	3.1
Amoxicillin Capsule 250mg	3.0
Glyceryl trinitrate Tablet 0.5 mg	2.9
Prochlorperazine Tablet 5mg	2.9
Aspirin Tablet 300mg	2.7
Domperidone Tablet 10mg	2.6
Paracetamol syrup 120mg in 5ml,100ml bottle	2.5
Gentamicin Sulphate Injection 80mg in 2ml Ampoule	2.4
Promethazine hydrochloride Tablet 25mg	2.4
Metoclopramide Injection 10mg in 2ml Ampoule	2.4
Hydrocortisone hemisuccinate Injection 100mg Vial	2.3
Nalidixic acid Tablet 500mg	2.3
Ciprofloxacin Tablet 500 mg	2.2
Ferrous sulphate Tablet 200mg	2.2
Metformin Tablet 500mg	2.2
Ibuprofen tablet 400mg	2.1
Propanthaline bromide Tablet 15mg	2.1
Bisacodyl Tablet 5mg	2.1
Chlorpheniramine maleate syrup 2mg in 5ml,100ml Bottle	2.0
Erythromycin tablet 500mg	2.0

Table D2: Most frequent medicine formulations prescribed to inpatients for selected diagnoses, Sri Lanka 2005

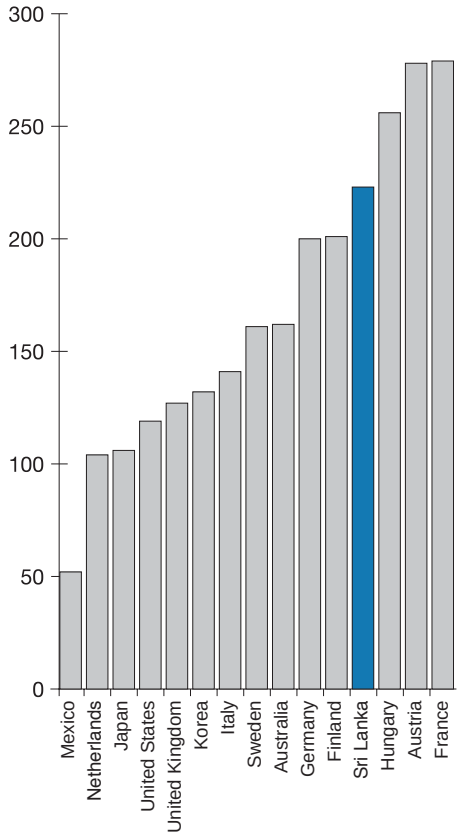
Primary diagnosis/Medicine formulation	Times prescribed per 100 inpatient episodes
Asthma (J45-J46)	
Prednisolone Tablet 5mg	61
Salbutamol respiratory solution 0.5% in 10ml Bottle	56
Chlorpheniramine maleate Tablet 4mg	51
Salbutamol Tablet 4mg	38
Salbutamol Tablet 2mg	33
Paracetamol Tablet 500mg	31
Theophylline Tablet 125mg	30
Amoxycillin capsule 500mg	26
Hydrocortisone hemisuccinate Injection 100mg Vial	19
Amoxicillin Capsule 250mg	9
Choline theophyllinate Tablet 200mg	7
Frusemide Tablet 40 mg	7
Potassium chloride Tablet 600mg	6
Famotidine Tablet 20mg	6
Theophylline sustain released Tablet 150mg	6
Ampicillin Injection 500mg Vial	5
Isosorbide dinitrate Tablet 10mg	4
Captopril Tablet 25mg	4
Nifedipine Slow Release Tablet 20mg	4
Beclomethasone Capsule 400mcg	4
Diarrhoea and gastroenteritis of presumed infectious origin (A09)	
Paracetamol Tablet 500mg	56
Propanthaline bromide Tablet 15mg	27
Nalidixic acid Tablet 500mg	26
Furazolidone Tablet 100mg	23
Sodium chloride Injection 0.9% in 500ml Bottle	22
Promethazine hydrochloride Tablet 25mg	18
Domperidone Tablet 10mg	17
Metoclopramide Tablet 10mg	17
Famotidine Tablet 20mg	10
Paracetamol syrup 120mg in 5ml,100ml bottle	9
Dextrose 5% 500ml Bottle	9
Domperidone Syrup 5mg in 5ml, 100ml Bottle	9
Ciprofloxacin Tablet 500 mg	8
Metronidazole Tablet 400 mg	8
Oral rehydration powder sachets	6
Co-trimoxazole Tablet 480 mg	5
Sodium chloride 0.45% & Dextrose 5% Injection 500ml Bottle	4
Gentamicin Sulphate Injection 80mg in 2ml Ampoule	4
Promethazine hydrochloride Injection 25mg in 1ml Ampoule	4
Vitamin B complex Tablet	4
Acute myocardial infarction (I21,I22)	
Isosorbide dinitrate Tablet 10mg	57
Glyceryl trinitrate Tablet 0.5 mg	51
Captopril Tablet 25mg	48
Aspirin Tablet 300mg	43
Clopidogrel tablet 75mg	33
Aspirin Tablet 150mg	31
Frusemide Tablet 40 mg	31
Paracetamol Tablet 500mg	26
Famotidine Tablet 20mg	22
Atenolol Tablet 25mg	18
Simvastatin tablet 20mg	17
Heparin sodium injection 5000IU in 5ml	16
Potassium chloride Tablet 600mg	15
Atorvastatin calcium Tablet 10mg	13
Sodium chloride Injection 0.9% in 500ml Bottle	12
Atorvastatin calcium Tablet 20mg	10
Nifedipine Slow Release Tablet 20mg	9
Omeprasole Capsule 20mg	9
Cefotaxime Injection 1g Vial	9
Streptokinase Injection 1.5M.U	9

Table E1: Comparison of statistics for patient discharges for selected primary diagnoses, Sri Lanka 2005 and selected other countries

	Sri Lanka	Australia	UK	France	Japan	USA
Primary diagnosis and indicator						
Acute Myocardial Infarction						
Discharges per 100,000 population	63	215	165	120	58	230
Percentage of discharges (%)	0.3%	1.3%	1.3%	0.4%	0.5%	1.9%
Average length of stay (days)	4.3	6.2	9.9	6.6	-	5.5
Asthma						
Discharges per 100,000 population	895	141	108	111	141	165
Percentage of discharges (%)	4.0%	0.9%	0.8%	0.4%	1.3%	1.4%
Average length of stay (days)	3.7	2.6	3.9	4.1	-	3.3
Diarrhoea and gastroenteritis of presumed infectious origin						
Discharges per 100,000 population	621	63	11	74	143	5
Percentage of discharges (%)	2.8%	0.4%	0.1%	0.3%	1.4%	0.0%
Average length of stay (days)	3.1	2.2	5.4	3.3	-	3.3
Diabetes Mellitus						
Discharges per 100,000 population	261	197	74	251	224	197
Percentage of discharges (%)	1.2%	1.2%	0.6%	0.9%	2.1%	1.7%
Average length of stay (days)	6.4	8.2	10.0	7.5	-	4.7
Single Spontaneous delivery						
Discharges per 100,000 females	2,427	287	254	1,532	818	206
Percentage of discharges (%)	5.5%	0.9%	1.0%	2.7%	3.9%	0.9%
Average length of stay (days)	5.1	2.5	1.8	4.6	-	1.9
All causes						
Discharges per 100,000 population	**22,256**	**16,220**	**12,723**	**27,924**	**10,550**	**11,925**
Percentage of discharges (%)	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Average length of stay (days)	**4.2**	**6.2**	**8.9**	**5.8**	**-**	**4.8**

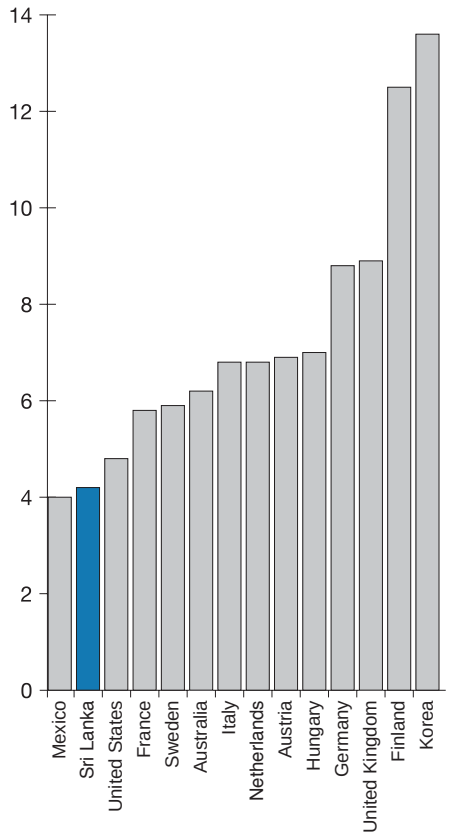
Notes:
1. Data for Sri Lanka refer to public hospitals only, which account for more than 90% of all inpatient admissions in the country.
2. Data for other countries are taken from OECD Health Data 2008.

Figure 6: International comparison of discharges per 1,000 population, Sri Lanka 2005 and selected other countries



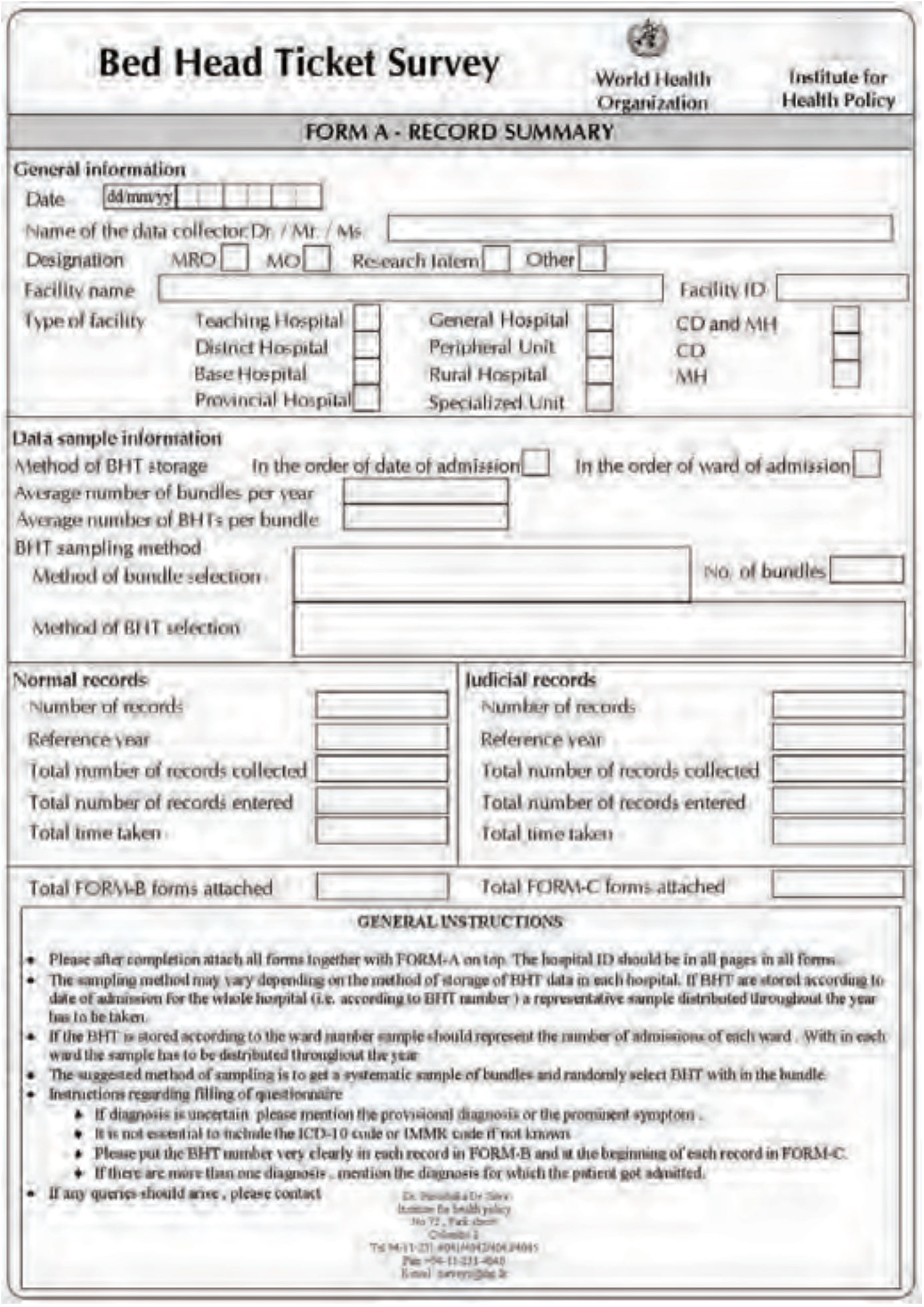
Source: See Table E1.

Figure 7: International comparison of length of stay, Sri Lanka 2005 and selected other countries



Source: See Table E1.

Figure 8: Form A used to summarise information about hospital and basis of sampling, PHIDS 2005



Bed Head Ticket Survey

World Health Organization

Institute for Health Policy

FORM A - RECORD SUMMARY

General information

Date dd/mm/yy

Name of the data collector Dr. / Mr. / Ms

Designation MRO ☐ MO ☐ Research Intern ☐ Other ☐

Facility name Facility ID

Type of facility

Teaching Hospital	☐	General Hospital	☐	CD and MH	☐
District Hospital	☐	Peripheral Unit	☐	CD	☐
Base Hospital	☐	Rural Hospital	☐	MH	☐
Provincial Hospital	☐	Specialized Unit	☐		

Data sample information

Method of BHT storage In the order of date of admission ☐ In the order of ward of admission ☐

Average number of bundles per year

Average number of BHTs per bundle

BHT sampling method

Method of bundle selection No. of bundles

Method of BHT selection

Normal records		Judicial records	
Number of records		Number of records	
Reference year		Reference year	
Total number of records collected		Total number of records collected	
Total number of records entered		Total number of records entered	
Total time taken		Total time taken	

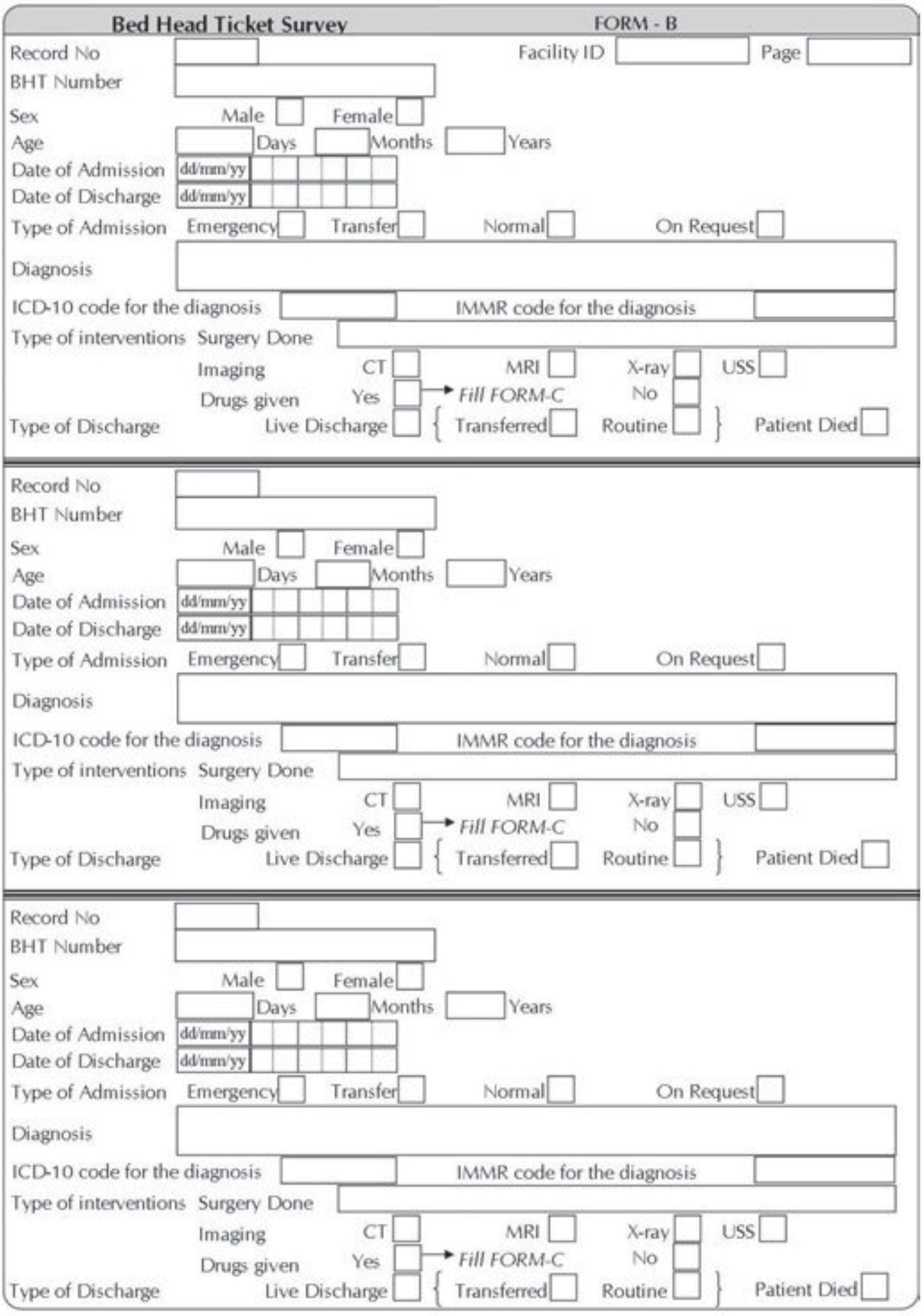
Total FORM-B forms attached Total FORM-C forms attached

GENERAL INSTRUCTIONS

- Please after completion attach all forms together with FORM-A on top. The hospital ID should be in all pages in all forms.
- The sampling method may vary depending on the method of storage of BHT data in each hospital. If BHT are stored according to date of admission for the whole hospital (i.e. according to BHT number) a representative sample distributed throughout the year has to be taken.
- If the BHT is stored according to the ward number sample should represent the number of admissions of each ward . With in each ward the sample has to be distributed throughout the year
- The suggested method of sampling is to get a systematic sample of bundles and randomly select BHT with in the bundle.
- Instructions regarding filling of questionnaire
  - If diagnosis is uncertain please mention the provisional diagnosis or the prominent symptom .
  - It is not essential to include the ICD-10 code or IMMR code if not known
  - Please put the BHT number very clearly in each record in FORM-B and at the beginning of each record in FORM-C.
  - If there are more than one diagnosis , mention the diagnosis for which the patient got admitted.
- If any queries should arise , please contact

[redacted]

Figure 9: Form B used to extract data from individual patient records, PHIDS 2005



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Keywords

Inpatients, admissions, discharges, hospitals, diagnoses, ICD-10, Sri Lanka

Data

A public use data file containing the data from this survey, as well as spreadsheets of the tables are made available online at the IHP website (http://www.ihp.lk/data/phids).

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