

# Characteristics of Psychiatric Admissions and Aspects of Overcrowding at the General Hospital, Kuala Lumpur

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## Summary

This study examined admissions, final diagnoses and mean duration of stay of patients in the Psychiatric Wards at the General Hospital, Kuala Lumpur. The male ward was severely overcrowded by 125% over the maximum bed capacity. The majority were psychotic, mainly schizophrenic. The female ward had 76% occupancy, also mainly psychotic. Neurotics, alcohol dependents and personality disorders formed less than 5% of the admissions. There was no difference in the mean duration of stay of patients of both UKM and GHKL Units stratified for diagnosis and disposal except for newly diagnosed schizophrenics. There is an urgent need for more male psychiatric beds/wards.

**Key words:** Quality assurance, psychiatric admissions, diagnosis, duration of stay.

## Introduction

The Psychiatric Unit at the General Hospital, Kuala Lumpur (GHKL), was established in 1971, following the implementation of the policy of decentralisation of the care of the mentally ill. It was timely and was ideally located at the Tunku Abdul Rahman Institute of Neurosciences at General Hospital, Kuala Lumpur, together with the Neurology and Neurosurgical Units. Under the leadership of the then Head of Department of Psychiatry, Dr (later Professor) Haji S.M. Haq, the Unit rapidly expanded to a capacity of 82 beds by 1976 — 32 male and 32 female beds plus 4 isolation beds each for both male and female wards together with 10 beds for drug dependents in a third ward.

In the early days the Unit served Kuala Lumpur and the whole of the state of Selangor as well as West Pahang, a catchment area population of about 1.5 million. Today, the population of Kuala Lumpur and Selangor has increased at least two-fold as a result of an influx of migrants from other states, as well as illegal immigrants, into the Klang Valley. However, the bed capacity of the Psychiatric Unit at GHKL has actually decreased to 74 (less 4 isolation beds in both male and female wards)! This represents a very poor ratio of beds per 1,000 population, by any standards. This will result in overcrowding in the psychiatric wards. In fact, this problem has been faced by the Psychiatric Unit for more than 16 years. In the 1976 annual report<sup>1</sup>, it was commented that the wards

were always full. If that was so, then, in this present day, with a catchment population of at least twice that of 1976, one would expect the ward overcrowding to be twice as bad.

The problem of overcrowding leads to several problems. Firstly, patients find that they have no beds to sleep on at night. Secondly, as a result of overcrowding, attention to individual patients becomes less as there are far too many patients, demanding their basic needs, to be attended to. This has led to quieter but dangerous patients killing themselves while the nursing staff were busy attending to more disturbed patients. On one occasion, a patient strangled another patient while the staff were restraining and sedating several acutely disturbed patients at that time. Many aspects of acute wards are conducive to violence, especially locked wards, in conjunction with staff who expect violence<sup>2</sup>. In addition, antagonism by nursing staff towards doctors (or certain doctors) may occur, with allegations that these doctors keep patients in the wards for too long and contribute to the overcrowding. As the GHKL Psychiatric Unit is shared by the GH Unit and the Universiti Kebangsaan Malaysia Unit team of doctors, there is inevitable comparison of admissions and length of stay of their respective patients. However, there has not been any formal and systematic study of this.

Although basic data regarding number of admissions, diagnosis, etc., can be obtained from the annual report of the Psychiatric Department, GHKL, this is not useful as the number of inpatients daily is required to determine whether there is actual overcrowding. The mean duration of stay is also required to determine if certain groups of patients remain longer and thus contribute to overcrowding. In ascertaining the mean duration, one cannot just take the difference between the date of discharge and the date of admission, as most psychiatric patients do not stay for the entire duration. They go on weekend leave as well as home leave prior to their discharge. This has to be taken into account. In addition, the analysis should be stratified into cases discharged home well and cases transferred to Hospital Bahagia Hulu Kinta/Hospital Permai Johor, i.e., psychiatric hospitals for longer stay patients. Many patients sent for longer stay are usually put on the earliest available train and often are in the ward for only a short time. Hence, these confounding variables must be eliminated by stratification of the data. This Quality Assurance Project was proposed following a QA Seminar by a WHO (World Health Organisation) consultant and organised by the Ministry of Health in 1989, to assess the problem of overcrowding, diagnosis and duration of stay of psychiatric patients.

The objectives of this study were to determine:

1. the actual daily number of patients in the male and female psychiatric wards in GHKL over a 12 month period;
2. the final diagnoses of patients in the GHKL Unit and UKM Unit, together with the number of patients admitted to the wards by the GHKL and UKM Units over a 12 month period;
3. the mean duration of stay of GHKL and UKM Unit patients stratified for new cases/readmissions, sex and disposal (discharged home/transferred to long-stay hospital) over a 12 month period.

### **Materials and Methods**

This is a retrospective study of hospital admissions, diagnosis and duration of stay of patients (stratified for sex, diagnosis, unit, new/readmission) in the psychiatric wards of the General Hospital, Kuala Lumpur. The period of study was from 1st January 1988 to 31st December 1988. The total number of patients in the wards each day was recorded by examining the daily census record. This was obtained from the Nursing Report Book, which records the progress of all patients by nurses in charge during the 3 daily shifts. Among the first and important notes recorded by the nurses in charge is the number of patients in the ward, the number on home leave, transferred out, absconded and discharged. The census of the morning shift was taken as the number of patients on that particular day.

## ORIGINAL ARTICLE

Number of admissions daily was also recorded from the Nursing Report Book. Demographic data of all admissions recorded included age, sex, marital status, occupation and ethnic group. The final (discharge) diagnosis was also recorded, as well as whether the patient was a new case or a readmission. The final diagnosis was usually determined by the consultant/specialist in charge of the patient. All these were obtained by tracing the case notes of all the patients in the study period. The diagnostic system used by both Units was the International Classification of Diseases - 9th Edition<sup>3</sup>.

The duration of stay of each patient was calculated in days, excluding the days patients went on weekend or home leave or AWOL. Patients absconding and those sent to Hospital Bahagia or Hospital Permai had their mean duration of stay recorded separately. Stratification of Unit was carried out dividing into GHKL and UKM Units.

**Table Ia**  
Mean age of patients in UKM Unit and GHKL Unit (male ward)

Diagnosis	GHKL Unit			UKM Unit		
	No of patients	Mean age (years)	SD	No of patients	Mean age (years)	SD
Schizophrenia	208	32.4	9.5	86	29.1*	8.6
Mania	17	35.0	17	22	27.0*	8.3
Depression	7	37.1	7.9	10	33.5(NS)	12.4
Others	45	25.4	3.2	48	24.2(NS)	5.4
Total	277			166		

GHKL=General Hospital, Kuala Lumpur Unit; UKM=Universiti Kebangsaan Malaysia Unit; SD=standard deviation; \*= $p < 0.01$ ; NS=not significant.

**Table Ib**  
Mean age of patients in UKM Unit and GHKL Unit (female ward)

Diagnosis	GHKL Unit			UKM Unit		
	No of patients	Mean age (years)	SD	No of patients	Mean age (years)	SD
Schizophrenia	239	35.5	11.5	128	31.9*	10.1
Mania	15	36.0	8.9	20	27.1*	8.4
Depression	10	39.2	13.8	41	39.7(NS)	11.3
Others	73	33.3	9.5	68	29.1(NS)	5.5
Total	337			257		

GHKL=General Hospital, Kuala Lumpur Unit; UKM=Universiti Kebangsaan Malaysia Unit; SD=standard deviation; \*= $p < 0.01$ ; NS=not significant.

**Results**

The admission books and nursing census and records for the female psychiatric ward were available for the whole of 1988. However, a few Nursing Report Books for the male ward for the period of January to June 1988 were missing. This involved both UKM and GHKL record books. As a result, only 6 months of data were obtained and analysed from the male ward (July to December, 1988).

There was a total of 443 male admissions over 6 months and 594 female admissions over 12 months. The mean age and diagnoses are given in Table Ia for male and Table Ib for female wards. The mean age of schizophrenic and manic patients in both male and female wards in the UKM Unit was significantly lower than that in the GHKL Unit ( $p < 0.01$ ). There was no significant difference in mean age of depressed patients, neurotics and other forms of psychosis in the 2 Units.

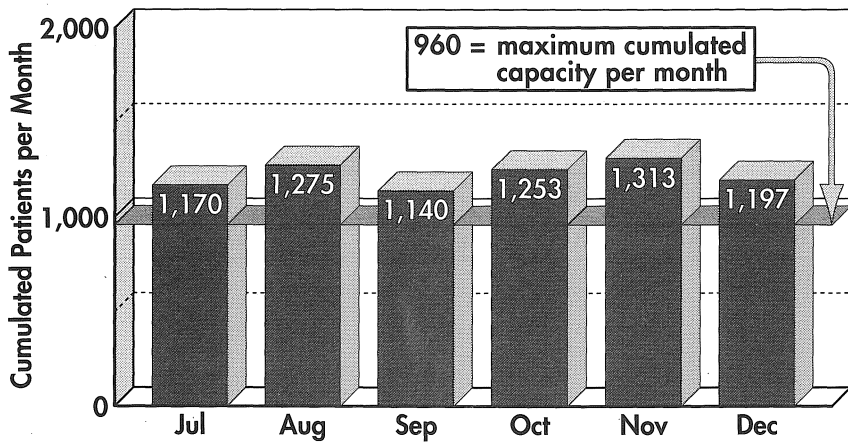


Fig 1a: Cumulated daily no of Patients in 1988 (male ward).

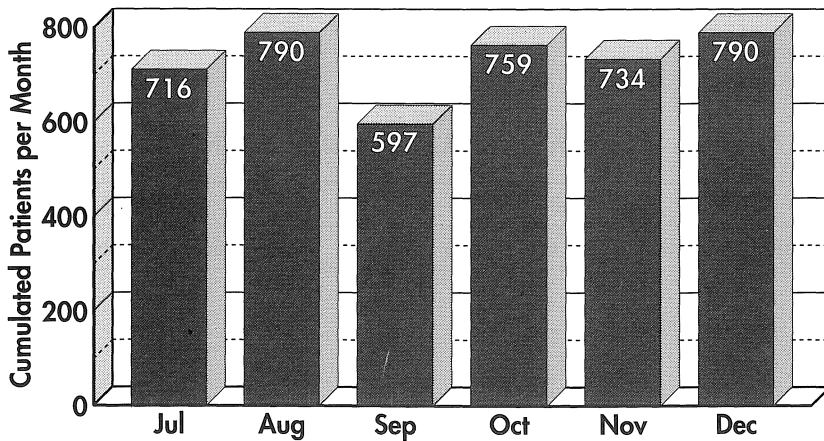


Fig 1b: Cumulated daily no of patients in 1988 (female ward).

## PSYCHIATRIC ADMISSIONS AND OVERCROWDING

In only 29 male and 49 female admissions were the records untraceable or incomplete, thus, 93% male and 92% female records in the study were traced and analysed.

### Actual number of daily inpatients

#### Male ward (July to December 1988)

The actual number of male inpatients was recorded and summated for each month. This was then tabulated on a bar chart (Fig 1a). In a month of 30 days, e.g., September, the maximum occupancy for the 32 bedded ward would have been 32 patients daily for 30 days. This would come to  $32 \times 30 = 960$  patient days. The occupancy rate could then be calculated by cumulated actual monthly inpatient/maximum occupancy  $\times 100$ .

As can be seen from Fig 1a, there was gross exceeding of the maximum bed capacity for all of the 6 months of study. The average occupancy rate was 125%. Of the 184 days in the study, there were only 10 days in which the actual number of inpatients were equal to or less than the maximum bed capacity!

#### Female ward (July to December 1988)

The calculation used was the same as with the male ward (Fig 1b). The occupancy was lower than the male ward with an average occupancy of 76%.

### Admissions and final diagnosis for UKM and GHKL Units

#### Male ward

This is summarised in Table II. For the 6 months from July to December, there were a total of 443 admissions of which 277 (62.5%) were GHKL Unit admissions and 166 (37.5%) were UKM Unit admissions.

**Table II**  
**Male psychiatric ward diagnoses July to December 1988**

	GHKL Unit	UKM Unit	Total
Schizophrenia	208	86	294 (66%)
MDP-mania	17	22	39
MDP-depressed	7	10	17
Other psychoses*	16	17	33 (7.4%)
Neuroses**	2	4	6
Alcohol dependence	1	4	5
Drug dependence	7	0	7
Personality disorder	7	1	8
Dementia	2	1	3
Others	10	21	31
<b>Total</b>	<b>277</b>	<b>166</b>	<b>443</b>

\* Acute psychosis, brief reactive psychosis, post-traumatic psychosis, drug-induced psychosis.

\*\* Depressive neurosis, anxiety neurosis, hysterical neurosis.

Looking at the final diagnosis for GHKL Unit, the majority received a diagnosis of schizophrenia (208 or 75.1%). Manic depressive disorders accounted for 24 (8.7%) and another 16 (5.8%) had other forms of psychosis. Overall, 248 (89.5%) were psychotic. There were only a few neurotics, alcohol and drug dependents and personality disorders.

The UKM Unit had more varied cases. Only 86 (51.8%) were given a final diagnosis of schizophrenia. The UKM Unit admitted numerically and proportionally more manic depressive disorders (32 or 19.3%) than the GHKL Unit. A similar pattern to the GHKL Unit was the low numbers of neurotics, alcohol and drug dependents and personality disorders.

Overall, 294 (66.0%) had a final diagnosis of schizophrenia, while 56 (12.6%) were diagnosed manic depressive psychosis. The neurotic, personality disorders and alcohol and drug dependents formed less than 2% each of the total group.

The group, 'other psychosis', comprised of a rag-bag of various diagnoses: acute psychosis, brief reactive psychosis, post-traumatic psychosis and drug-induced psychosis. The neurotic group comprised of depressive neurosis, anxiety neurosis and hysterical neurosis.

There were some patients who did not receive a 'proper' diagnosis or for whom no diagnosis was recorded. Examples were attempted suicide and attention-seeking behaviour. This was grouped in the "others" diagnosis together with a small number who were diagnosed as mentally retarded. This was mainly recorded by medical officers who had recently joined the Unit and were unfamiliar with the use of the classification and diagnostic system.

**Table III**  
**Female psychiatric ward diagnoses Jan to Dec 1988**

	GHKL Unit	UKM Unit	Total
Schizophrenia	239	128	367 (62.0%)
MDP-mania	15	20	35
MDP-depressed	10	41	51
Other psychoses*	14	15	29 (5.1%)
Neuroses**	6	22	28 (4.7%)
Alcohol dependence	1	2	3
Drug dependence	6	0	6
Personality disorder	3	2	5
Dementia	2	5	7
Others	41	22	63
Total	337	257	594

\* Acute psychosis, brief reactive psychosis, puerperal psychosis, drug-induced psychosis.

\*\* Depressive neurosis, anxiety neurosis, hysterical neurosis, obsessional neurosis.

*Female ward*

This is summarised in Table III. There were less admissions per day compared to the male ward. A total of 594 admissions were recorded over 12 months. Again, the GHKL Unit had more admissions than the UKM Unit (337 vs 257, or 56.7% vs 43.3%).

The pattern of final diagnosis was also similar to that of the male ward. GHKL Unit diagnosed more schizophrenics (239 or 70.9%) compared with the UKM Unit (128 or 49.8%). Conversely, the UKM Unit had more manic depressive disorders (61 or 23.7%) than the GHKL Unit (25 or 7.4% of their admissions).

There were very few non-psychotic patients who were admitted. However, there were slightly more neurotic patients who were admitted (28 or 4.7%) when compared to the male ward (only 6 admissions over 6 months). The majority of these admissions were from the UKM Unit (22 vs 6 GHKL Unit admissions). The neurotics included depressive neurotics, anxiety neurotics, hysterical neurotics and obsessional neurotics.

**Table IV**  
Mean duration of stay (male ward)

Diagnosis	GHKL Unit		UKM Unit	
	No of patients	Mean (days)	No of patients	Mean (days)
Schizophrenia (new cases)	31	13.7	26	26.1*
Schizophrenia (readmissions)	77	12.6	36	15.5 (NS)
Mania (new cases)	4	19.5	6	18.3 (NS)
Mania (readmissions)	5	8.8	6	18.8 (NS)
Depression (new cases)	3	36.0	10	14.4 (NS)
Depression (readmissions)	1	4.0	1	11.0
Psychosis NOS (new cases)	14	15.6	11	16.9 (NS)
Psychosis NOS (readmissions)	4	14.5	0	0

GHKL=General Hospital, Kuala Lumpur Unit; UKM=Universiti Kebangsaan Malaysia Unit;  
\*=*t*-test,  $p < 0.05$ ; NS=not significant; NOS=other forms of psychosis.

**Admission rates per call day**

This was calculated from July to December 1988, as the male ward data from January to June was incomplete. Of the 184 days call, the GHKL Unit did call on 74 days (40.2%), while the UKM Unit did 110 days (59.8%). This was due to the UKM Unit having more medical officers in the pooled call rota than the GHKL Unit at the period of study.

There were 441 GHKL Unit admissions and 294 UKM Unit admissions, giving an admission rate per call day of 5.9 for the GHKL Unit and 2.7 for the UKM Unit. UKM Unit had more new cases (155) than GHKL Unit (139). In the male ward, although the GHKL Unit admitted 62% of the total number of cases, only 87 out of 277 (31.4%) were new cases as compared to the UKM Unit in which 88 out of 166 admissions (53.0%) were new cases (Chi square=19.37, df=1,  $p<0.01$ ). Similarly, in the female ward, the GHKL Unit admitted 56.7% of all cases but only 98 out of 337 (29%) were new cases compared to the UKM Unit which had 136 out of 257 (52.9%) new cases (Chi square=33.71, df=1,  $p<0.01$ ), reflecting the UKM Unit's greater involvement in call duty while the GHKL Unit admitted more readmissions/relapses.

**Table V**  
**Mean duration of stay (female ward)**

Diagnosis	GHKL Unit		UKM Unit	
	No of patients	Mean (days)	No of patients	Mean (days)
Schizophrenia (new cases)	34	13.7	40	19.1*
Schizophrenia (readmissions)	120	15.0	40	18.1 (NS)
Mania (new cases)	3	49.7	2	32.5 (NS)
Mania (readmissions)	6	24.5	7	24.6 (NS)
Depression (new cases)	7	8.1	25	10.3(NS)
Depression (readmissions)	7	15.0	18	16.8 (NS)
Psychosis NOS (new cases)	7	14.7	4	23.0(NS)
Psychosis NOS (readmissions)	2	13.5	2	10.0

GHKL=General Hospital Kuala Lumpur Unit; UKM=Universiti Kebangsaan Malaysia Unit;  
\*=t-test,  $p<0.05$ ; NS=not significant; NOS=other forms of psychosis.



**Mean duration of stay of patients***Male ward*

For patients treated and then discharged home, this is summarised in Table IV. In only one group, i.e., new cases of schizophrenia, did the UKM Unit have a significantly longer mean duration of stay (26.08 days) compared to the GHKL Unit (13.70 days) ( $t=2.39$ ,  $p=0.02$ ). In the other stratified groups: schizophrenia readmissions, depression new cases, other psychoses new cases and readmissions, there was no difference in the mean duration of stay for both UKM and GHKL Units ( $p>0.05$ ).

Regarding patients transferred to Hospital Bahagia, a hospital for patients who needed longer stay and rehabilitation, only schizophrenics and manics were transferred by both units. There was no difference in the mean duration of stay of patients in both units.

*Female ward*

Regarding patients treated and discharged home, this is summarised in Table V. The findings are similar to those of the male ward, even though the period of study was longer. In the new cases of schizophrenia group, the UKM Unit had a longer mean duration of stay (19.13 days) compared to the GHKL Unit (13.76 days) ( $t=2.02$ ,  $p=0.04$ ). Apart from this, the rest of the stratified groups showed no significant difference in their mean durations of stay between the 2 units (schizophrenia readmissions, depression new cases and readmissions, other psychoses new cases).

Regarding patients transferred to Hospital Bahagia, again only schizophrenics and manics were transferred. Analysis was done on readmission schizophrenics only, as there were no new cases of schizophrenia sent to Hospital Bahagia by the GHKL Unit. There was no difference in the mean duration of stay of readmission schizophrenics between the 2 Units.

**Discussion**

This study revealed that there was gross overcrowding of the male psychiatric ward at the General Hospital, Kuala Lumpur. At least 1 in 5 male patients had no bed. This was arrived at after deducting all registered patients who were not on the ward and were on home leave. The female ward was not overcrowded. Overcrowding leads to many problems, as mentioned in the Introduction, including violence as well as reduced nursing observation and care. Therefore, there is a strong case for the creation of additional male psychiatric wards at the General Hospital, Kuala Lumpur.

Secondly, this study revealed that the majority of the patients admitted were psychotic, mainly schizophrenic. One weakness in this study is that the final diagnosis was used. It could be possible that the doctors were diagnosing schizophrenia more readily, as in the New York hospital in the US-UK Diagnostic Project<sup>4</sup>. However, testing this is beyond the scope of this study. A more likely explanation is that only the more disturbed patients were admitted and these tended to be the deteriorated schizophrenics!

There was, however, a difference between the GHKL Unit and UKM Unit in that the UKM Unit admitted proportionally less schizophrenics and more affective disorders and more neurotics. It could be that the University lecturers admitted more variety for teaching purposes to medical undergraduates as well as doctors specialising in psychiatry under the University training programme. Alternatively, it could well be that many of the cases diagnosed schizophrenia by the GHKL Unit would, if seen by the UKM Unit, be diagnosed as affective disorder. This was the observation at the US-UK Diagnostic Project. To prove this, a separate study similar to the US-UK Project would have to be carried out.

A glaring feature of the admissions is the very few numbers of neurotics, alcohol dependents and personality disorders. There are a large number of attempted suicides admitted to the medical wards in the GHKL and

many of them have reactive depression (adjustment disorder with predominant depression using DSM IIIR)<sup>5</sup>. Many of these are discharged once they are medically fit. From the psychiatric side, they may not have resolved their difficulties and may need additional time perhaps for counselling or family/couple therapy. Under present circumstances, many of the patients are allowed to go home as many refuse to be transferred to the psychiatric ward on seeing the preponderance of frankly psychotic patients. A more appropriate solution would be to have a ward for non-psychotic patients where the patients can spend a few days recuperating, be counselled by the staff and have marital/couple/family therapy where needed. This concept was once proposed, i.e., to have a ward on the 4th floor of the Institute of Neurosciences<sup>6</sup>. Unfortunately, this idea was not carried further.

The analysis of the mean duration of stay of patients has put to ashes the myth that UKM Unit patients stay longer than GHKL patients. It has long been acknowledged that the wards are severely overcrowded with an acute shortage of beds, but it had been implied that the UKM Unit contributed to the overcrowding by keeping patients longer in the ward. Prior to this study, even some UKM lecturers agreed that their patients stayed longer, though there was no firm evidence for this!

Reducing the number of inpatients is not the solution. As mentioned in the Introduction, the Psychiatric Unit caters for the whole of Selangor Darul Ehsan and Kuala Lumpur, with a catchment population of over 3 million! Viewed from this perspective, the admission rates could be considered low. (The University Hospital at University Malaya in Petaling Jaya has a psychiatric ward but it is not a government-gazetted psychiatric unit, hence they do not take in police cases and patients brought by police for observation and treatment are usually the disturbed ones for which the police had to be called in. When the University Hospital Psychiatric wards are full, they have the prerogative to refer all admissions to the Psychiatric Unit at GHKL.) Even taking into account the combined psychiatric beds of all hospitals in Kuala Lumpur and Selangor (74 at GHKL, 56 at UHKL and 10 at Klang General Hospital) there is a bed population ratio of 0.46 per 10,000 for psychiatric beds in Kuala Lumpur and Selangor. This is far below the country's average of 4.3 psychiatric beds per 10,000 population. Furthermore, looking at General Hospital, Kuala Lumpur, there is a ratio of 1 psychiatric bed to 32.4 general hospital beds compared to the national average of 1 psychiatric bed to 4.5 general hospital beds<sup>7</sup>. This reflects the low priority given to psychiatry at GHKL.

It is not unreasonable to expect the UKM Unit to have more admissions — they have more calls due to the pooling of medical officers for call duty (ratio of 6:4). However, this was not so as evidenced by the admission rate per call day. A possible explanation is that the GHKL Unit had a larger patient population due to its longer existence. However, with the increased calls and more new cases it will not be long before the UKM Unit builds up a patient population base as big as or even bigger than that of the GHKL Unit. As this study was on records 4 years ago, the situation at present may have altered. It is also noted that the GHKL Unit sent more patients to Hospital Bahagia than the UKM Unit.

Another possible solution to reduce admissions is to have a community psychiatrist service that goes into the community and catches early relapses and, hopefully, sets treatment at home before the patient has a full-blown relapse requiring admission. A community psychiatric service was set up following a working paper proposal in 1984<sup>8</sup>. However, there has been no systemic record of the objectives of the team and no analysis as to the effectiveness of the team in preventing more admissions as well as its cost-effectiveness. Financial constraints have always been cited when requests have been made for expansion/more staff. There has already been a paper appealing for the development of community health services in Malaysia, especially for the increasing number of chronic schizophrenic patients<sup>9</sup>. It is hoped that this Quality Assurance Project has emphasised sufficiently the gross overcrowding of the male psychiatric ward and that urgent action be taken to alleviate the problem.

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