REASONS FOR VISITING A HOSPITAL-BASED GENERAL MEDICAL CLINIC

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SUMMARY

The reasons why 860 patients visited the general medical clinic at the University Hospital, Kuala Lumpur were studied. 75.3% of the patients came for evaluation of symptoms; 12.4% sought checkups for chronic diseases; 4.9% requested diagnostic checkups and screening tests; 4.8% came to renew prescription. Few visits were made for evaluation of injuries, receiving test results or for administrative examination. This profile reflected the function of the clinic as an acute diagnostic centre. Other applications of the results are discussed.

INTRODUCTION

The importance of ambulatory care in the prevention, diagnosis and treatment of disease is generally recognized, but the contents and quality of ambulatory care are difficult to study and analyse. Not only are the health problems of patients seen in the ambulatory setting different from those encountered in the hospital, but the methodologies of measurement are different.

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In ambulatory care, the same emphasis cannot be placed on the diagnosis as in hospital care. Primary medical care is initiated by a symptom, complaint or request. The result of an ambulatory visit may or may not be a diagnosis. Perhaps the symptom will abate before the diagnosis is reached, the patient may not return, the request may involve preventive action, or the problem may not indicate the presence of disease. On the other hand, the reason for a visit always exists, no matter what type of visit or which ambulatory setting is used.

The reason for visit plays a significant role as the determinant of the initial course of investigation, i.e. who will see the patient, where and when will he be seen, and what will be done. Thus, for management and operational purposes, this sort of data will be more useful than mere diagnostic categories.

Certainly, if one were interested in identifying patterns of incidence of diseases, measuring episodes of care for specific conditions (resulting in multiple visits), may be more useful.

Notwithstanding the above, this study was undertaken to survey the reasons for visit to a hospital-based general medical clinic for a preliminary exploration of some of these issues.

As we shall see, the collection of this kind of data would be useful to managers, clinicians

and health services researchers for the purposes of health planning and clinic management; teaching and training; as well as quality assurance exercises.

METHODS AND MATERIALS

This ambulatory medical care survey was conducted in the adult general medical clinic at Polyclinic C, University Hospital, Kuala Lumpur during one randomly assigned week of practice in March 1982 (representing 2 % sample of the annual attendance).

The University Hospital is a 870-bed acute general and referral hospital. The polyclinics offer services in general and specialty medicine, surgery, orthopedics, obstetrics-gynaecology, pediatrics (including immunizations), ophthalmology, otolaryngology and psychiatry. Patients are tri-aged at the main polyclinic reception counter by experienced nurses to the respective clinics according to their reasons for visit. Patients with urgent problems and acute trauma are directed to the Emergency Room. Ancillary support in dietary, rehabilitative (physiotherapy and occupational therapy) and social welfare services are available.

Admissions in 1982 totalled 30,536; outpatient attendances totalled 227,671. The general medical clinic itself recorded 51,749 visits (23% of the total).

In the general medical clinic, most new patients were seen in five four-and-a-half hour morning sessions, while follow-up patients were mostly seen in four two-hour afternoon sessions each week.

Data collection for this survey was carried out by six clinic doctors who completed a patient encounter form for all the patients seen in that week. As far as possible, the doctor recorded in the patient's own words the main reason for his visit. Secondary problems were not analysed. At the end of the visit, the doctor recorded the clinic diagnosis, using the problem-oriented method at the highest level of resolution.[1]

The Reason for Visit Classification for Ambulatory Care (RVC) was used in this study. It was developed by the American Medical Records Association under the auspices of the National Center for Health Statistics for use in the National Ambulatory Medical Care Survey in the United States in 1977.[2]

Five factors determine the decision of the patient to seek medical attention: who initiated the visit – the patient, doctor, or third party; why was it initiated – for illness or non-illness; was it an emergency, what was to be done – a checkup of a known condition, or a diagnostic or therapeutic procedure; whose request for a procedure to be carried out – the patient or other. Based on these principles, the following seven modules were developed to form the basis of the RVC.

Symptom module: The reason for visit is expressed as a complaint – a symptom; regardless of whether the description is given in lay or medical terminology.

Disease module: The patient gives a diagnosis as the reason for visit; this could be a diagnosis previously supplied by a doctor, or a condition that the patient has experienced before or has self-diagnosed. Most follow-up visits for chronic diseases will be thus coded.

Diagnostic, Screening and Preventive module: This represents non-illness visits, for example, visits for routine medical examinations, preventive care and family planning services; in particular, for blood pressure check, screening for sexually transmitted diseases, urinalysis, blood tests and X-rays.

Treatment module: Specific treatment procedure are requested, usually initiated by the doctor. In this study, prescription renewal was classified in this module.

Injuries and Adverse Effects module: The reason for visit is clearly the result of injury, usually an emergency visit. It includes adverse drug reaction.

Test Results module: This represents return visits to review test results and reserve counselling.

Administrative module: This reason for visit is initiated by an outside party rather than by the patient or the doctor. This includes medical examination for disability (including sick certification), insurance, university entrance and employment purposes, usually involving completion of a form.

Coding of the reasons for visit and clinic dignoses based on this classification was carried out by a trained technician. Computerized data processing was carried out using the Statistical Package for the Social Sciences.[3] Statistical analysis of variance was done using chi-square and Fisher's exact test.

RESULTS

860 patient visits were recorded in the week under study.

Reason for Visit

The reasons for visit were grouped under seven basic modules (Table I). The majority of patients (75.3%) presented with symptoms.12.4% came for a problem related to a previously known illness. 4.9% came for diagnostic checkups, screening tests and preventive care, and 4.8% came for specific treatment procedure; in this study, mostly for renewal of prescriptions. 1.9% came to review a test result. It was not a policy of the clinic to undertake administrative examination, explaining the small number (0.6%) in this category. Patients presenting with injuries were seen in the orthopaedic clinic or emergency room, and not in the general medical clinic.

Table II shows the 10 most common reasons for visit in detail.

Of the 648 patients with symptoms, just over two-thirds were accounted for by the following (Table III): 24.0% had respiratory symptoms (comprising 15.1% with cough, 6.3% with head cold); 18.5% had general symptoms (9.1% with chest pain, 4.8% with fever); 17.9% had digestive symptoms (9.6% with abdominal pain, 3.4% with diarrhoea); 14.0% had a neurological complaint (8.3% headache, 3.4% dizziness); 6.5% had skin rash; and 2.9% suffered from backache.

Of the 107 patients citing diseases as a reason for visit (Table IV), 24.3% came for problems related to diabetes, 17.8% for hypertension, and 11.2% for asthma. The remaining more common disease presentation included 7.5% with peptic ulcer disease, 7.4% with cardiovascular diseases, and 3.7% with urinary tract infections.

TABLE I
REASONS FOR VISIT CLASSIFICATION GROUPED BY 7 MAJOR MODULES

	Reason for visit		Clinic diagnosis		
Module	N	%	N	%	p value
Symptom	648	75.3	377	43.8	<0.01
Disease	107	12.4	439	51.0	<0.01
Screening	42	4.9	22	2.6	NS*
Treatment	41	4.8	2	0.0	<0.01
Injury	1	0.1	14	1.6	<0.01
Test Result	16	1.9	4	0.0	NS
Administrative	5	0.6	2	0.0	NS

* NS = $p > 0.01$; N = 860.

TABLE II
10 MOST COMMON REASONS FOR VISIT

Reason for visit	N	%
Cough (including productive cough)	98	11.4
Abdominal pain	62	7.2
Chest pain	59	6.9
Headache	54	6.3
Skin rash	44	5.1
Coryza, head cold, sorethroat	41	4.8
Prescription renewal	39	4.5
Fever	31	3.6
Diabetes mellitus	26	3.0
Dizziness	22	2.6
Others	384	44.7

N = 860.

TABLE III
REASONS FOR VISIT IN THE SYMPTOM MODULE GROUPED BY BODY SYSTEMS

Body system	N	%
Respiratory	155	24.0
General	120	18.5
Digestive	116	17.9
Nervous	91	14.0
Musculoskeletal	62	9.6
Skin	49	7.6
Genitourinary	35	5.4
Mental, cardiovascular, eye and ear	20	2.2

N=648.

TABLE IV
8 MOST COMMON REASONS FOR VISIT PRESENTING WITH DISEASES

Disease	N	%
Diabetes mellitus	26	24.3
Hypertension	19	17.8
Asthma	12	11.2
Peptic ulcer disease	8	7.5
Ischaemic heart disease	4	3.7
Heart failure, arrhythmia	4	3.7
Urinary tract infection	4	3.7
Lymphadenopathy	3	2.8
Others	27	25.2

N=107.

Clinic Diagnoses

At the end of the clinic visit, diagnostic categories were recorded as in Table I (modules) and V (details). The doctors resolved 42% of the symptoms into diseases, resulting in a four-fold expansion of the diagnoses in the disease module.

One point is worth noting here: the listing of symptoms as the clinic diagnosis is consistent with the problem-oriented record system. While in some instances it may reveal weak diagnostic skills of the doctors, it frequently reflects the uncertainty in ambulatory practice, and the benign nature of these complaints. Of course, the veracity of the clinic diagnoses can only be ascertained upon long term followup.

TABLE V
10 MOST COMMON CLINIC DIAGNOSES

Diagnosis	N	%
Upper respiratory tract infection	141	16.4
Peptic ulcer disease	49	5.7
Diabetes mellitus	46	5.3
Hypertension	42	4.9
Tension headache	39	4.5
Chest pain, non-specific	38	4.4
Urinary tract infection	34	4.0
Arthritis	29	3.4
Asthma	24	2.8
Gastroenteritis	22	2.6
Others	396	46.0

N= 860.

It is interesting to compare the clinic diagnoses based on body system (aside from the remaining 5.2% classified in modules) with the results of similar studies done in other ambulatory settings. 17 general practitioners recorded 941 diagnoses from 818 patients seen in a single day pooled from their respective practices, using the ICD classification (Table VI).[4] The general practitioners saw more patients with respiratory and mental disorders. No complications of pregnancy were seen in our clinic because such patients were tri-aged to the obstetrics clinic.

On the other hand, more circulatory, endocrine, general constitutional, infection-related and neurological complaints were evaluated in our clinic. This reflected the internist-type nature of this hospital-based ambulatory practice. The rates for digestive, skin, musculoskeletal and genitourinary disorders remained similar.

It is interesting that only 3.4% of the patients in general practice compared to 9.2% in this survey had vague symptoms which could not be characterized further. Perhaps the general practitioners were better at eliciting the psychosomatic nature of these complaints and had coded them under mental disorders.

The Ministry of Health, in comparison, provided statistics only for newly registered outpatients Table VII).[5] The higher recording of conjunctivitis, ear infections and worm infestations probably

TABLE VI
941 DIAGNOSTIC CATEGORIES OF 818 PATIENTS SEEN IN A ONE DAY RANDOM SURVEY OF 17 GENERAL PRACTITIONERS (4) COMPARED TO THIS SURVEY

	GP		This survey		
	N*	%	N**	%	p value
Respiratory system	320	34.0	196	22.8	<0.01
Digestive system	111	11.8	94	10.9	NS
Skin	64	6.8	44	5.1	NS
Musculoskeletal system	54	5.7	33	3.8	NS
Circulatory system	52	5.5	87	10.1	<0.01
Perinatal disorders	51	5.4	0	0	<0.01
Mental disorders	49	5.2	26	3.0	<0.05
Genitourinary system	40	4.3	52	6.0	NS
Endocrine, nutritional metabolic	40	4.3	64	7.4	<0.01
Symptoms, and signs	32	3.4	79	9.2	<0.01
Infections	31	3.3	58	6.7	<0.01
Nervous system	20	2.1	68	7.9	<0.01
Eye, ear, blood, neoplasm, congenital	77	8.2	16	1.9	
Module					
Screening			21	2.4	
Injuries			14	1.6	
Treatment			2	0.2	
Test result			4	0.5	
Administrative			2	0.2	

NS = $p > 0.05$; *N = 941; **N = 860.

TABLE VII
DIAGNOSTIC CATEGORIES OF NEWLY REGISTERED PATIENTS AT ALL GOVERNMENT OUTPATIENT DEPARTMENTS SEEN IN 1980[5]

Disease	N	%
Upper respiratory tract infection	178.7	26.4
Accidents	76.0	11.2
Skin diseases	45.3	6.8
Fever	32.3	4.8
Gastritis and stomach disorders	27.3	4.1
Conjunctivitis	23.8	3.5
Ear infections	22.1	3.5
Worms	15.0	2.2
Gastroenteritis	14.5	2.2
Neuralgia	12.4	1.5
Others	230.5	34.0

N=678 per 1000 population.

represented pediatric visits. The 11% rate for accidents reveal the importance of the government clinics in treating minor trauma. On the other hand, since digestive disorders were usually recurrent, the lower rate of these disorders may reflect under-reporting due to bias of the analysis restricted to only new patients.

Selected symptom analysis

Cough: 90 patients presented with cough. On reviewing the clinic diagnoses, most of these, [75(83%)] turned out to have an upper respiratory tract infection. 10 (11%) had other respiratory diseases, including asthma, bronchitis, pneumonia, emphysema, and pleurisy. Only three patients were labelled "non-specific" cough.

Abdominal Pain: 60 patients had abdominal pain. 30 (50%) patients were thought to have peptic ulcer disease. In 12 (20%) patients, the symptoms were treated as colic. 17 (28%) had a miscellany of disorders, including five (8%) urinary tract infection, two (2%) gastroenteritis, and the others with biliary colic, flatulence, constipation, prolapsed uterus, fibroid, bladder pain, and skin infection. Only one patient was thought to have depression.

Chest Pain: Another frequent symptom was chest pain. 59 patients gave this complaint. 38 (64%) were considered benign symptoms, consisting of non-specific chest pain and myalgia. Five (9%) were psychosomatic in origin. Seven (12%) were related to heart disease, including ischemic and rheumatic heart disease. The remaining nine (15%) had miscellaneous disorders, including chest and abdominal injury, cough and asthma, epigastric pain and gastritis, arthritis and herpes zoster.

Headache: 54 patients had headaches. 38 (70%) were tension headaches, seven (13%) were migraine, four (7%) were caused by upper respiratory tract infections, and two (4%) were related to hypertension. Only one patient was thought to have anxiety neurosis.

Presenting Complaints of Selected Clinic Diagnoses

Diabetes mellitus: 46 patients were diagnosed as having diabetes mellitus. 31 (67%) presented chronic care, including renewal of prescriptions. Six (13%) came for diagnostic assessment and confirmation of diagnosis by blood tests. One experienced hypoglycemia. The remaining eight (17%) presented with a range of diabetes-related symptoms including headache, dizziness, paresthesia, palpitation, urinary frequency and hesitancy, skin and scrotal itch.

Hypertension: 41 patients were diagnosed for hypertension. 26 (63%) came for maintenance therapy, including renewal of prescriptions. Five (12%) came for blood pressure checks, and one patient had diagnostic radiography for confirmation of diagnosis. Eight (20%) patients presenting with various symptoms, including dizziness, headache, weakness, nausea, and shortness of breath were found to be hypertensive.

Asthma: 24 patients had asthma. 14 (58%) came for maintenance care, including renewal of prescriptions. The remaining ten (42%) complained of shortness of breath, cough, and chest pain as their reason for visit.

DISCUSSION

Classification systems for ambulatory care are important in providing baseline data concerning the community's utilization of ambulatory medical care resources not only in terms of the volume, but also the characteristics of office and clinic visits.

The Reason for Visit Classification for Ambulatory Care (RVC) is a classification of patient terminology encountered in the ambulatory care setting. The emphasis of the RVC is on the patient's motivation for seeking medical care and his perspective of the problem or reason for visit. This is the important conceptual difference distinguishing the RVC from the *Ninth Revision of the International Classification of Diseases (ICD-9),*[6] which is the official World Health Organization (WHO) publication used in this country for coding morbidity and mortality in both inpatient and outpatient health statistics.

The WHO itself and others[7] have recognized that the ICD-9 does not entirely meet the needs of an ambulatory care classification. Not surprisingly a plethora of classification systems, well reviewed by Steinwachs[8] and Schneider, [9] have been developed in attempts to meet this need: the NAMCS Symptom Classification,[10] Bain-Spaulding,[11] Renner-Piernot,[12] Patient Request Code,[13] CR Alpha Code,[14] Columbia Medical Plan Classification,[8] and International Classification of Health Problems in Primary Care.[15]

The RVC was chosen for use because of its ease of understanding (to facilitate usage by non-medical staff), clarity, accuracy, specificity, efficiency (up to 120 codings per hour), conciseness, comprehensiveness (less than 5% classification in catch-all categories), high resolution (in discriminating other aspects of the patient-visit status), flexibility of revision and computer application.[9]

It is essential that such classification systems be relatively simple to use and code; otherwise in the setting of the clinic, with the large numbers of patients, limited time for patient encounter and limited staff to handle data processing, implementation would not be feasible.

The results of the RVC can be applied in a number of ways: the reasons why patients seek ambulatory medical care can be described; the role of various health providers can be defined, for example, delegation of certain practices like baby care of immunization to hospital assistants or nurse practitioners, using clinical algorithms;[16] the allocation of resources and patient scheduling can be decided; quality assurance can be applied to ambulatory medical practice; community outreach programmes, and academic curriculum for general or ambulatory practice training can be devised,[17] ambulatory and visit groups[18] can also be derived.

Descriptive Comparisons

The results of the reason for visit survey are not directly comparable with other ambulatory practices which classify the diagnosis made after the outcome of the clinic visit for reasons discussed earlier. However, by using our clinic diagnosis categories, we are able to make some comparisons. Even so, the importance of using standardized classification schemes based on modules, body systems and individual codes for meaningful comparisons must be emphasized.

The collection of statistics for non-standardized populations, like newly registered outpatients in government clinics[5] has limited use.

Clinical Algorithms and Staff Allocation

Two-thirds of the clinic management of diabetes mellitus and hypertension, as discussed in the results, were devoted to maintenance of the chronic disease state. Such activity lends itself to management by clinical protocols[19] that can be carried out by hospital assistants or nurse practitioners. Furthermore, given the chronic nature of the disease, the administrative implementation of appointments and sessions for health education would be both feasible and desirable.

Other conditions amenable to management by clinical algorithms include various acute minor illnesses like upper respiratory tract[20] and urinary tract[21] infections. In this clinic, the delegation of the management of these two conditions to hospital assistants or nurse practitioners could potentially free up as much as one-fifth of physicians' time.

Resource Allocation

Since three-quarters of the clinic activity were directed towards symptom analysis, ancillary support from the diagnostic laboratory and radiology department must be of sufficient capacity to meet these demands without undue delay.

Quality Assurance

In the evaluation of abdominal pain, it is surprising that only one patient was found depressive. Similarly, in the evaluation of headache only one patient was thought to have anxiety neurosis. Clinically, one would have expected more frequent psychosomatic diagnosis from these kinds of complaints. However, depression could have been noted as a secondary problem as was probably done by the general practitioners (Table VI). Secondary problems were not analysed this study. In any case, this kind of data lend itself to exercises in quality assurance where a review of diagnostic criteria can be undertaken to investigate unexpectedly low frequency of common diagnoses occurring in the clinic (and vice versa), dissonant from clinical experience or comparative studies.

Teaching and Training

Problem-oriented Diagnoses: In teaching medical students the problem-oriented approach towards physical diagnosis, the statistics derived from symptom analysis are useful in recognizing the local sociocultural manifestations of symptoms and behavioural response to disease. For instance, most patients (83%) complaining of cough turned out to suffer from upper respiratory tract infections. Conversely, out of 114 patients diagnosed of upper respiratory tract infection, 64 (56%) presented with cough as their chief complaint. It appeared that cough was the distressing symptom in upper respiratory tract infection that prompted many patients to seek medical attention.

Example of other 'pearls' for medical students that could be gleaned from the data follows: Half of the abdominal pains were clinically peptic ulcer disease. Our clinic patients were quite preoccupied with chest pain, yet most chest pains were benign only 12% were of cardiac origin. Although three-quarters of the headaches were tension headaches, migraine (13%) was not uncommon.

Disease Presentation: One-sixth of the diagnosis of diabetes was made after the evaluation of diabetes-related symptoms. Again, the knowledge of the diversity of presentation of diabetes mellitus in local patients is useful for the teaching of medical students.

Ambulatory Visit Groups

Ambulatory Visit Groups[18] can be derived for the determination of work productivity which can form a basis for a schedule of fees or insurance reimbursement.

The rate of patients seen per doctor-hour can only be a crude measure of productivity in the clinic. A more sophisticated measure has to take into account the case mix of the practice (based on the reasons for visit), the visit status of the patient as well as the intensity of care accepted as the standard in that particular institution.

The Ambulatory Visit Groups do precisely that and define types of visits that are predictive of the time spent in the patients' encounter. Doctors' productivity could then be compared by performing analyses based on their respective output for specified Ambulatory Visit Groups. Information from this survey could form the basis for the formulations of local Ambulatory Visit Groups.

CONCLUSION

This inquiry into the reasons for visit of patients to a hospital-based general medical clinic has yielded a description and statistics with potential applications in resource and staff allocation, quality assurance exercises, and teaching and training programmes.

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