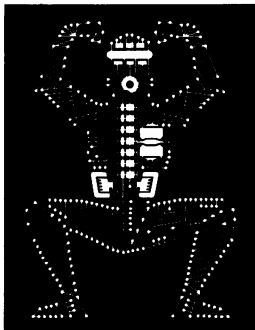


No other antihypertensive available works like

Catapres®



PRESCRIBING INFORMATION Catapres® clonidine hydrochloride

Composition

2-(2,6-dichlorophenylamino)-2-imidazoline hydrochloride.

Indications

Catapres has been used successfully to treat hypertension of all grades of severity.

Contraindications

There are no known absolute contraindications to the use of Catapres.

Warnings

If Catapres therapy is discontinued for any reason, withdrawal should be done gradually over several days rather than abruptly. There have been rare instances of rebound hypertensive crises following sudden discontinuation of high doses of the drug. This can be effectively controlled by reinstating Catapres at the previous dosage level; however if more rapid control is necessary, intravenous infusions of alpha adrenergic blocking agents such as intravenous phentolamine (5-10 mg doses at 5 minute intervals up to a total of 30 mg) are effective in reducing the blood pressure.

Precautions

Patients with a known history of depression should be carefully supervised while under treatment with Catapres, as there have been occasional reports of further depressive episodes occurring in such patients.

As an abrupt withdrawal of Catapres is followed in rare instances by an excess of circulating catecholamines, caution should be exercised in the concomitant use of drugs which affect the metabolism or the tissue uptake of these amines (MAO inhibitors and tricyclic antidepressants respectively).

A few instances of a condition resembling Raynaud's phenomenon have been reported. Caution should therefore be observed if patients with Raynaud's disease or thromboangiitis obliterans are to be treated with Catapres. Catapres has a mucous membrane drying effect on the eyes. On rare occasions this has led to corneal ulceration.

As with any drug excreted primarily in the urine, smaller doses of Catapres are more effective in treating patients with a degree of renal failure. The use of Catapres during the first trimester of pregnancy is subject to the normal precautions surrounding the use of any drug. Animal tests have shown no evidence of foetal abnormality, though there was some decreased fertility.

Adverse effects

The most commonly encountered side effects are initial sedation and dry mouth. However these effects are seldom severe and tend to be dose related and transient.

There are occasional reports of fluid retention and weight gain during the initial stages of treatment with Catapres. This side effect is usually transient, but the addition of a diuretic will correct any tendency to fluid retention in these cases.

Other occasional drug-related side effects which have been noted in literature include dizziness, headache, dryness, itching or burning of the eyes, rarely corneal ulceration, nocturnal urines, nausea, euphoria, constipation, impotence (rarely), and agitation on withdrawal of therapy. Facial pallor has occasionally been noted at high dosage levels.

No toxic reactions have been observed on investigating blood status, renal function and liver function. Long-term treatment has shown no adverse effect on blood urea nitrogen levels, and in patients with pre-existing renal damage there is no suggestion of further impairment of the renal blood flow despite a fall in arterial blood pressure.

Dosage

Initially 0.05-0.1 mg four times daily. This dosage may be increased every few days until satisfactory control is achieved. When used alone the final dosage usually ranges between 0.2 and 1.2 mg daily. The last dose of the day should be given immediately before retiring to ensure blood pressure control during sleep.

Catapres used with a diuretic


Catapres has been used successfully together with chlorothalidone, furosemide and the thiazide diuretics. Lower doses of Catapres or the diuretic may be used to achieve the same degree of blood pressure control whenever a diuretic is added to the Catapres regimen or vice versa. In these circumstances, most mild-to-moderate hypertensives can be controlled using only 0.3-0.6 mg of Catapres daily in divided doses.

Severe hypertensives have been successfully treated with a diuretic and higher doses of Catapres (frequently up to 1.2 mg daily and occasionally up to 5 mg daily). When extremely high doses of Catapres are necessary dosage adjustments should be made over a period of several months.

Catapres used with other antihypertensive agents

Catapres has been used together with methyldopa, guanethidine, bethanidine and hydralazine, and further reductions in blood pressure have been achieved.

Availability

1. 0.1 mg Tablets: A white, single-scored tablet, impressed with the motif  on one side and the Boehringer Ingelheim symbol on the reverse.

2. 0.2 mg Tablets: An orange, single-scored tablet, impressed with the motif  on one side and the Boehringer Ingelheim symbol on the reverse.

Bottles of 50 and 500 tablets.

For further prescribing information, consult the Catapres Product Monograph or your Boehringer Ingelheim representative.

OVER 750 PUBLISHED STUDIES ON CATAPRES HAVE APPEARED IN THE WORLD-WIDE LITERATURE TO DATE.

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B-166-75

A measure of a family doctor's work. Part I: setting up a one-practice study

By J.A. Collyer, FCFP

The Winston dictionary defines quality as the "essential nature of a person, or thing; a characteristic; as, elasticity is a quality of rubber".

If we were buying a blanket, we might ask for a quality blanket as a form of excellence. Each blanket manufacturer will tell us why his blanket is best.

However, we could measure the basic characteristics of the blanket, its size, how much of the bed it covers, how much it weighs, the type of material used in making the blanket, how warm it keeps us, how much it costs, and how much we like it. By the same reasoning, if we measure the basic characteristics and function of a family doctor, we will be measuring his qualities.

If we then compare the measurement of his quality with others doing the same job, we will begin to get some insight into what makes up excellence in the job. At its best, excellence is going to be a relative measurement — one that will grow with increasing expertise to provide greater reliability, specificity and stature.

The final measure of the doctor's function must be like the blanket's — how warm does he keep his patients? This two-part report selects from a study which attempted to measure the quality of 1 year, August 1970 to July 1971, of routine services. It also examines the experiences of other family physicians in Canada and Great Britain and, where possible, compares the author's results with theirs.

Background

The Royal Commission on Health Services, the Hall commission, reported in 1964 that the average physician in

an average week saw 159 patients: 16 to 20 each day in the office, 6 to 8 each day in the hospital and 1 to 4 each day in the home, a total of 23 to 32 each day. The commission calculated he put in 52 hours a week, one half of it in his office. He averaged 16 minutes a visit. His consultation rate, that is, the average number of visits per patient each year was 4.18, and for 1700 patients he would receive or make 7100 visits. In my opinion this survey gives a composite view of the average Canadian family doctor's work habits and size of practice at that time.

A major one-year study of a group practice in Saskatoon in the mid 60s was reported initially in 1969 by Garson and Bury¹ and in 1972 by Wolfe and Badgely.²

This community clinic had an organization unusual for Canada. The six family doctors worked on salary for a community group, the Saskatoon Community Health Foundation. They believed a community-owned group practice provided better quality care with less cost and more efficiency. By so testing their beliefs, they made a valuable contribution to Canadian family medicine. Whether they are right or wrong, they have measured their work and have given us the first reliable standard of the family doctor's work in Canada. In 1967 their average size of practice was 2000 patients per physician. Each doctor averaged 148 visits during a work-week of 45.7 h, spending 10.9 min with each patient in the office.

Four smaller studies on the doctor's work-week have been done in Canada. Bartel, Waldie and Rix³ compared their Vancouver practice with a rural practice in the Okanagan Valley in the late

60s. They reported the doctors worked 60 to 70 h/wk but this figure appears to be estimated. Taylor⁴ in Leamington, Ont. also felt his work-week was 60 hours; when he actually measured it over 6 months, he found it was 49 hours. While doing a teaching practice in a university family practice unit, I recorded⁵ an average length of visit of 14.8 minutes. Sellers, in a comparison of group and solo practice,⁶ found little evidence that one provided better quality care than the other. Physicians in both groups were seeing 41.2 patients a day — more than others have reported.

Method

From August 1970 to July 1971, the active diagnosis of each patient I saw in the office was recorded as was type of service, charge made, the date and identity of the patient; these data were later analysed by computer (detailed work tables are available from the author). The actual recording form was an expanded version of the Ontario Hospital Insurance Plan (OHIP) card used for billing. All my recording was done at the time of the patient contact; that is, as I completed the medicare card, I completed the study form by using carbon paper. (In any family doctor study, the recording must be simple enough to be part of, and not interfere with, day-to-day work, or



Quality, with medical services as with a blanket, is measure of characteristics and ability to fulfil function.

the study will founder.) All patients were registered by families and pertinent social data were included — age, sex and occupation, for example. In addition three time studies were done, 1 month of every 4, to record the time devoted to the performance of all services. A month-long study was also done of the use of prescriptions. X-ray and laboratory usage and telephone and referral service were measured in special week-long studies.

Every illness creating a problem or affecting the problem presented was recorded. For example, obesity was recorded with angina when obesity was believed to be a factor worsening the angina, even though the patient made no mention of it.

Doctor, patients

As a Canadian of English-Irish ancestry, I was trained in medicine in Ontario and received postgraduate training in British Columbia, Britain, Saskatchewan and Ontario. I practised for several years in a town of 2500 people in rural Ontario. After 2 years in an academic post I have practised for the past 5 years in a city of more than 200 000.

The practice was restricted to a defined area within the northeastern corner of the city. A secretary-receptionist was the only employee. The 40 m² premises were in the basement of a pharmacy. No routine work was done after 6 pm. I was on call each evening, but weekends were covered by a rota system. The patients who called on the weekends when I was off duty were not included in these data unless I came in to see them — to deliver a pregnant woman, for example.

The patients were drawn from a mixed industrial and residential district originally settled by Anglosaxons, who were attracted to the surrounding farmland; it is now a university city of 225 000 people. The patients are chiefly middleclass workers; 79% of them have annual incomes between \$3000 and \$10 000. They are predominantly Roman Catholic, United and Anglican (52% Protestant). The practice contained 2145 registered patients in 929 households, the average size of which was 2.3. The sexes were evenly distributed. In 74% of the households, ages ranged from 5 to 44. This distribution reflects the population of the city as a whole and thus suggests that this family doctor is able to service all groups by age and sex in the community. It also provides a valid sample for the measurement of population morbidity.

In the 12 months of the study I performed 6268 services: 4508 for 2145 registered patients (seen or not

Table I—Services provided by physician in average month

Office visits	Number	(%)
History and physicals	32	(6)
Initial visits	166	(35)
Follow-ups	115	(23)
Drugs and injections	30	(6)
Special procedures	14	(3)
Prenatal visits	33	(6)
Psychotherapy	84	(17)
Well-baby care	18	(4)
Total	492	(100)
House visits		
At home (day)	6	(27)
(night)	3	(14)
Emergency dept.	13	(59)
Total	22	(100)
Hospital visits (day, nonemergent)		
Hospital visits	84	(95)
Deliveries	4	(4.5)
Surgery	1	(0.5)
Total	89	(100)

seen) and 1760 services for nonregistered patients. References below to the "total population" mean 2145 registered patients plus the nonregistered people seen, for whom 6268 services (4508 + 1760) were done; "registered practice" refers to the 2145 people for whom 4508 services were done.

The consultation rate (average number of services per patient per year) forms one of the basic measurements of a family doctor's work. It becomes a measure of his efficiency in dealing with the ailments of his patient population. If two doctors have equal results in treatment, the one with the lower consultation rate would be more efficient. It might also suggest that he is a "better" doctor because he does the same job in less time. If one doctor looks after more people in less time, then, presumably, the doctor with the lower consultation rate is conserving the community health care dollars. In this practice, this rate — the average number of visits per patient each year — was 2.1; that is, 2145 registered patients at risk required 4508 services.

This figure (2.1) is artificially low because some of the patients were registered for only part of the year. A

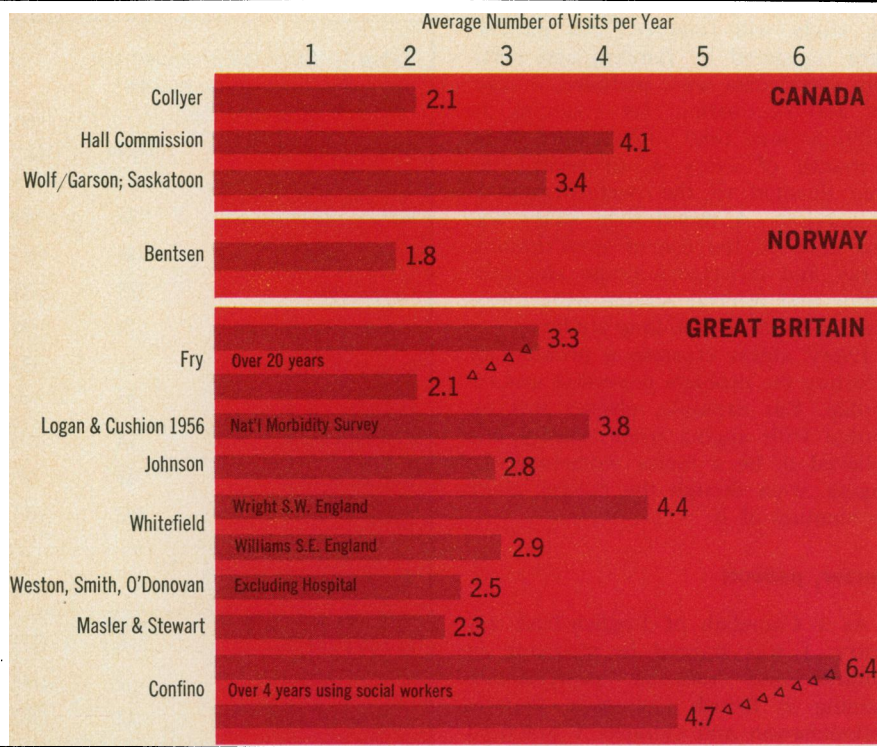


FIG. 1—Comparison of consultation rates

more accurate figure is obtained by taking all of the services performed for registered patients at risk (4508) plus the services done for the nonregistered patients (1760) and dividing that (6268) by the total number of patients registered (2145), that is, 2.9. This figure is artificially high and gives us the other extreme. It seems likely that, in future years, a fully registered Canadian practice for the full year will have a consultation rate between 2.5 and 2.9. As can be seen in Fig. 1, this is a relatively low figure.

The paper "Present State and Future Needs of General Practice"⁷ provides an extensive list of consultation rates recorded in the literature up to 1970. Fig. 1 shows these rates vary between 2.1 and 4.1 in Canada, 1.8 in Norway and between 2.1 and 6.4 in Great Britain.

In this Ontario practice, 27.3 services were performed in the average day, 130 in the average week. Tabulated by the month, these consisted of 493 office visits (82% of the total), 22 house visits (4%), and 89 hospital visits (13%), for a total of 604. On average, these findings are on the lower side of this range reported for all family physicians.

Table I shows average monthly services performed, August 1971 to January 1972. Table II shows the sites of the family doctor's work. Studies of city practices, such as this one, and those of Wolfe and Badgely,² Hopkins and Cooper⁸ and Fry,⁷ show that the urban doctor provides more than 80% of his services in the office. It should be noted that the British physicians

and Wolfe in Saskatoon made no hospital visits.

Another important measure of the family doctor's quality is his ability to employ various technical procedures. These vary with his situation and location. A doctor serving 2500 people around a Newfoundland outpost will use many surgical skills to deal with the emergencies encountered in an isolated rural population. He will have only a limited time to treat non-life-threatening illness such as psychological disturbances. Also, there may be little demand for such services, because many of these people may be so occupied with the problems of survival that they will have little time for the introspection and complex emotional distress associated with prosperity and excess leisure.

Therefore, the measurement of a doctor's skills as a means of measuring his quality of care will vary greatly with his situation. My experience as documented in this study, in a large city with a teaching hospital, is vastly different from my earlier experience as one of three doctors in a town of 2500 with the closest bloodbank 64 km away.

Except for minor surgery, my operations were limited to dilatation and curettage, fracture (6) and circumcisions (16). There was also relatively little medical emergency work. The major activities based in technique were those of obstetrics and psychiatry because most minor or major trauma and motor vehicle accidents go directly to hospital emergency department.

Another measure of the quality of a

COMPOSITION: Each uncoated, scored, light tan tablet contains spironolactone, 25 mg. Aldactone offers an entirely new approach to the treatment of essential hypertension, edema and ascites, including resistant states. Aldactone specifically blocks the effects on the kidneys of mineralocorticoids and antagonizes the sodium retaining and water retaining effects of aldosterone which is important in the production of edema.

INDICATIONS: Aldactone is indicated in the treatment of edema and ascites of congestive heart failure, hepatic cirrhosis, the nephrotic syndrome, and idiopathic edema as well as that due to malignant effusions especially if not responding well to conventional diuretics.

Aldactone is also indicated for lowering blood pressure in essential hypertension, correcting hypokalemic alkalosis in severe hypertension and in the treatment of myasthenia gravis.

DOSAGE: Edema—the initial recommended adult dose is one 25 mg tablet four times daily. Rarely a patient may require up to 300 mg per day and others as little as 75 mg per day. If adequate diuresis with Aldactone is not obtained within five days, Aldactone should be substituted in its usual dosage to obtain the synergistic effect of the spironolactone and the thiazide components. In an occasional patient with severe, resistant edema, it may be necessary to add a glucocorticoid to this combined therapy.

In children a dosage providing 1.5 mg of Aldactone per pound of body weight should be employed.

Essential hypertension—One tablet four times a day, treatment should be continued at least two weeks.

PRECAUTIONS: Other than acute renal insufficiency there are no known contraindications to Aldactone. It should be used judiciously in patients with hyponatremia or hyperkalemia.

SIDE EFFECTS: Side effects are mild and infrequent; drowsiness, mental confusion and maculopapular or erythematous eruptions have occurred rarely, subsiding within forty-eight hours on discontinuation of the drug. Gynecostasia and mild androgenic manifestations have also been reported in a few patients.

TOXICITY: No reports of fatal overdosage in man. No adverse effects from high dosage in chronic animal studies.

Symptoms of Overdosage—True toxicity has not been reported; drowsiness, mental confusion or a maculopapular or erythematous rash has occurred rarely. These manifestations disappear promptly on discontinuance of medication. Hyperkalemia may be exacerbated.

Treatment—No specific antidote. No true toxicity has occurred or is expected. Appearance of effects described above require only discontinuance of the drug. For hyperkalemia, reduce potassium intake, administer potassium-excreting diuretics, intravenous glucose with regular insulin or oral ion exchange resins.

SUPPLY: Bottles of 100, 1,000 and 2,500 tablets. Complete prescribing information available on request.

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the only specific, competitive aldosterone antagonist for gradual, sustained diuresis with minimal possibility of potassium loss...especially indicated for the digitalized patient.

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Table II—Comparison of visit distribution in Canada and Great Britain

	Office	Home	Hospital
Collyer (London, Ont.)	82	4	13
Waldie (Vancouver)	68	5	27
Rural BC	60	4	36
Wolfe (Saskatoon)	91	9	0
Fry (London, England)	66	14	0
Hopkins (London, England)	92	8	0
Wright (SW England)	73	27	0
Yellowlees (Scotland)	40	60	0
Logan (all England)	68	27	0

Table III—Physician's time: a comparison of several studies

	Weekly hours worked	Weekly hours consulting	Min/office visit	Min/house visit
Collyer	39.8	34.3	10.8	25
Hall commission	52	—	16	—
Taylor	49	—	—	—
Garson, Bury	45.7	—	—	—
RCGP	42.2	35.3	6.6	17.6
Fry	35.7	33.5	6.5	15
Hodgkin, Gillie	35.8	—	—	—
Wolfe, Badgely	—	—	24.5	—
Hasler, Stewart	—	—	10	—
Hopkins	—	—	8	—

For sources see references in part II of Dr. Collyer's study

family doctor's work is the number of referrals he makes, either for a second opinion about a patient's problem, or to turn over the patient to another physician for complete care of that episode. Both types of referral are initiated by asking another doctor, usually a specialized consultant, to see the patient. To refer too little implies arrogance or undue confidence. To refer too much implies a lack of the knowledge and skill that family practice requires or a lack of confidence. At the worst, it suggests a dumping of patients to speed up turnover and increase one's income when one is paid on a fee-for-service basis.

How much is too little or too much? Traditionally it has been assumed that a family doctor should be able to look after most of the problems he sees, as much as 75 to 90% of them. To date, this estimate is mere conjecture; however, comparisons between descriptions of what various physicians have actually done should provide a baseline. To get some impression of the frequency of referrals in my own practice all referrals (22) were recorded in November 1972. This was 4.5% of the 489 patients I saw that month. These 22 referrals comprised 8 surgery, 6 psychiatry, 6 medicine and 2 ob-gyn.

More information about the referring habits of others is badly needed to give insight into how family doctors practise. Estimates of psychiatric referrals, for instance, range between 44 and 327 per year per 10 000 patients.^{8,9} My study suggests current and future needs for psychiatric referral in Canada approximate 288 per year per 10 000. This number of patients represents the practice of four doctors, each of whom

would refer 72 patients each year. Mine is obviously a very small sample and the conclusion must be looked at in that light.

Another obvious measurement of the quality of a family physician's practice is his use of the laboratory, including x-ray facilities. For 1 week in November 1972 I recorded all the requests I made for x-ray and laboratory studies except for routine hemoglobin determinations and urinalyses done in the office. That week I saw 155 patients and ordered 16 laboratory tests and 5 radiographs. The lab tests comprised seven blood tests, six urine examinations and three pap smears. Thus the diagnostic referral rate was 13.7%. Because the sample was very small, one can only look at it as an indication; however, an estimate that 10 to 15% of patients require such tests is probably reasonable.

Ten percent of the patients were referred for lab tests and 3.7% were referred for x-ray examination. These estimates can be compared with those from Wright's study¹⁰ of 68 practices. Wright found that physicians referred 4.6% of the patients they saw for diagnostic tests: 2% of patients were referred for x-ray examinations and 2.6% for laboratory tests. Was I over-investigating, or was Wright's group underinvestigating? One can only decide by measuring results.

The telephone, at least in North America, is an important form of contact with patients. One can argue whether this is good or bad or how it should be used, but in the Ontario practice described here the telephone is a useful tool to deal with many problems and to give advice. Whenever I

believed that physical examination would provide no information that would alter my treatment, I was prepared to order medication after a phone conversation with a patient I knew well. One of the family doctor's great advantages is that he comes to know his patients as people. Talking on the phone with someone you know is of much more practical use than talking with a stranger.

An exact count of telephone calls was kept during the week of Nov. 28, 1972. As a rule, all incoming calls were returned at the end of each half-day, except for calls from other doctors and emergency calls, which were dealt with at once. My philosophy was that, except for emergencies, people who had made an appointment and had come to the office deserved my primary attention.

My secretary received a total 176 phone calls that week. Of these, I took 23 calls at the time they were received, and I returned 71 calls in the daytime and 17 calls at night. Thus of the week's 176 calls, the doctor returned 111 calls either at the time or later. My telephone calls that week break down thus: to the patient, 68; to the druggist, 32; to another doctor, 6; and to other individuals, 5. On the average day, 35 calls came into the office, and I spoke on the telephone 22 times — 18.6 times during the day and 3.4 times in the evening. I spoke to 13.6 patients, 6.4 druggists and 1 doctor and took 1 other call each day. I was unable to find other studies to make comparisons.

Dr. Collyer will conclude his report in a following issue of CMAJ. Part II will also include a full listing of references.