

Use of management-by-objective for the case finding and treatment of hypertension

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SUMMARY. *A management-by-objective approach was used by the health care administration of the Kupat Holim Sick Fund to improve the detection and quality of treatment of hypertension in 20 family practices in Ashdod, Israel. The number of hypertensive patients in each practice was estimated from the age-sex register and this was compared with the actual number. The combined prevalence in the 20 practices was only 20.8% of the expected prevalence, and of those treated the blood pressure of 29.6% was not under control (diastolic pressure 95 mmHg or over). The practice teams committed themselves to improving the detection of hypertension by active case finding. Once every six months for three years the health care consultant reviewed the results of detection and treatment with each team. After three years the number of hypertensive patients had increased from 977 patients (20.8% of expected prevalence) to 2914 patients (62.1%) — a three-fold increase. The percentage of treated patients whose blood pressure was not under control (diastolic pressure 95 mmHg or over) did not change substantially (from 29.6% to 27.9%). A management-by-objective approach, when accompanied by regular feedback, appears to motivate primary care teams to improve the detection of hypertension in their patients.*

Introduction

ANY attempt at improving the quality of care in primary care clinics must start by setting objectives for good care.¹ This management-by-objective approach is widely used in industry to improve productivity — goals are set by the company and the workers make a concerted effort to achieve these goals by a definite date. If the goal is not achieved all the contributing factors are analysed in an attempt to improve the subsequent results. The use of this technique in medicine is generally confined to the field of hospital administration.²

More than 80% of Israelis are insured by Kupat Holim, the Health Insurance Institute of the Histadrut Labor Union. Each doctor has a defined list of patients (an age-sex register) and it is therefore possible using national prevalence figures to calculate the expected prevalence of any disease for each list. In 1980 a national sample of the Israeli population showed that 51% of men and 39% of women with hypertension were not on therapy and of those on therapy only 47.5% of the men and 53.0% of the women had controlled blood pressure (hypertension was defined as persistent systolic pressure of greater than or equal to 160 mmHg and/or a diastolic pressure of greater than or equal to 95 mmHg, or on therapy).³ Thus the great majority of hypertensive patients were either not being treated or were being inadequately treated. The purpose of this study was to use a management-by-objective approach to improve the detection and treatment of hypertension.

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Method

In September 1981 the health administration of Kupat Holim, Yehuda district, in central Israel, decided to use a management-by-objective approach to stimulate doctors and nurses in primary care clinics to detect every hypertensive patient in their practice by performing case finding (routinely screening the blood pressure of every adult who came to the clinic for whatever reason). The town of Ashdod, with a population of 65 000, was selected for the study. There are 20 Kupat Holim family practices in Ashdod. Each doctor has between 1500 and 2500 patients on his or her list from the age of 12 years upwards and in total these practices serve 35 422 people. Each doctor works with a nurse who gives injections, changes dressings, makes a nursing assessment of every patient who visits the clinic (and, wherever possible, solves the patients' problems without their seeing the doctor), visits house-bound patients and works with the doctor in the follow-up of chronic diseases such as hypertension and diabetes.^{4,5} Each team has a register of hypertensive patients with space to record their blood pressure every month for one year. This register also serves as a check on patient drop-out. If the blood pressure is not recorded this indicates that the patient has not visited the clinic. This stimulates the team to ask the patient to return for a follow-up visit.

D.A. is a consultant in family and community medicine in Ashdod. Her job is to instruct and advise the health care teams on the organization of their practices. In this capacity she routinely reviews patient records and instructs the teams on ways of improving care, including record keeping for acute and chronic diseases. In an attempt to stimulate the teams to improve case finding, she calculated the expected prevalence of hypertension (systolic pressure 160 mmHg or over and/or diastolic pressure 95 mmHg or over) for each team from their age-sex register using national statistics.^{3,6,7} Since each team had a list of its known hypertensive patients it was possible to estimate the percentage of hypertensive patients receiving treatment. By reviewing the medical records of the known hypertensive patients the number of treated patients whose blood pressure was under control (diastolic pressure less than 95 mmHg on their last visit) was calculated. A graph was drawn showing the actual and expected number of hypertensive patients, and the percentage of treated patients whose blood pressure was under control. The consultant then discussed with each team individually and with the group as a whole how to improve case finding. Each team agreed to measure routinely the blood pressure of those patients who were aged 18 years or over and who had not had their blood pressure measured for at least one year. It was stressed that the diagnosis of hypertension should only be made after at least four and ideally six blood pressure measurements, each one week apart. Techniques of blood pressure measurement were reviewed. At six monthly intervals the consultant visited each team to see how many hypertensive patients were being treated and how many had their blood pressure under control. In addition, early in the study, an expert on hypertension discussed the latest methods of treating hypertension with the health care teams.

The study was carried out over three years, from September 1981 to September 1984.

Results

At the beginning of the study 977 patients were listed in the 20 practices as hypertensive. This represents only 20.8% of the 4691 expected hypertensive patients from national statistics. Over the next three years this number increased, in six monthly intervals, to 1409 (30.0% of the expected number), 1907 (40.7%), 2247 (47.9%), 2510 (53.5%), 2659 (56.7%) and to 2914 (62.1%). This

represents a 300% increase. In September 1984 the male to female ratio of hypertensive patients was 1:0.64 and the age distribution was: less than 40 years 4.0%, 40–64 years 52.3% and more than 65 years 43.7%.

In September 1981 29.6% of the treated patients had diastolic pressures of 95 mmHg or over; in September 1983 this was 25.5% and in September 1984, 27.9%.

Discussion

The purpose of this study was to stimulate health care teams to improve their detection of hypertension. To a substantial degree this purpose was achieved — there was a three-fold increase in the number of patients treated for hypertension. These results of active case finding are similar to those reported by others. Lederer and colleagues performed case finding for hypertension in two small villages in central Israel for four years. A review at the end of the fourth year showed that the blood pressure of all adult patients had been measured and that the number of patients treated for hypertension had increased by 300%.⁸ Studies in Wales,⁹ London,¹⁰ Scotland,¹¹ Finland¹² and Canada¹³ have also shown that most hypertensive patients in the community can be detected by diligent case finding over a few years. Reviews of practices in Tel Aviv,¹⁴ Jerusalem and Beer Sheba,¹⁵ have shown that one-third to one-half of adult patients visiting their doctor have no record of their blood pressure being measured for several years, if at all.

Showing the teams the actual and expected number of hypertensive patients in their practices was associated with a marked increase in the number of hypertensive patients detected. While it cannot be definitely stated that this stimulus was responsible for improving case finding there is some evidence that this is indeed the case. Three teams had kept a list of their hypertensive patients for three years before the study (1978–81). During this time the number of hypertensive patients had increased only slightly from 126 to 136. However, after the intervention the number of known hypertensive patients increased over the next three years to 520, a 3.8-fold increase. The doctors and nurses appeared to show a growing interest in how they were progressing relative to their colleagues and relative to their own target number.

There is increasing evidence that many people currently receiving treatment for hypertension do not have this disease. Studies have shown that many hypertensive patients are normotensive despite poor compliance with therapy.^{16–18} In this study patients suspected of having hypertension had their blood pressure measured on at least four occasions before the diagnosis of hypertension was made. An attempt was also made to improve blood pressure measurement techniques.

It is disappointing that the percentage of hypertensive patients with diastolic pressures greater than 95 mmHg did not decrease over the three years. Whether this was due to poor patient compliance, unaggressive treatment of hypertension, or both is not known. Studies in the literature suggest that both these factors are of approximately equal importance.^{16–18} In the future more vigorous antihypertensive care and improved compliance techniques will be stressed. The lessons of this study are currently being applied throughout the Kupat Holim primary care system by 729 doctor–nurse teams, representing 35% of the family practices, treating 46 909 hypertensive patients. The teams send details of their blood pressure registers to a central registry in January of each year and are sent a letter which summarizes: — the actual number of hypertensive patients being treated; — the expected number of hypertensive patients according to their age–sex register; — the percentage (and names) of the treated patients whose blood pressure is not controlled.

The medical and nursing administrators in all 15 areas of Israel are also given copies of these results. They review the results with the health care teams. It is hoped that this feedback will result in better detection and treatment of hypertensive patients. There is growing evidence that the management-by-objective approach

may be useful in other aspects of primary care.^{19,20} In a study of the care of diabetic patients in 10 general practices in England the use of this technique was associated with a marked improvement in fasting blood sugar levels and a reduction in haemoglobin A_{1c} levels after one year.¹⁹

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