

The control of hypertension, atherosclerotic diseases, and diabetes in a family practice

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SUMMARY. A community-orientated programme for the control of hypertension, atherosclerotic disease, and diabetes has been developed in a family practice in a neighbourhood of Jerusalem. Intervention is directed mainly towards the control of risk factors associated with these diseases.

The programme has specific objectives for diet, smoking, obesity, blood pressure, serum cholesterol, glucose intolerance, and diabetes mellitus, and the identification and treatment of patients with cardiovascular diseases. The survey seeks to identify the nature and extent of problems, intervention by medicinal and educational means, and continuing surveillance and evaluation.

The programme aims to test and demonstrate the feasibility of carrying out multifactorial community health care within the framework of a family practice, thereby developing a joint practice of primary health care and community medicine.

Introduction

This is a report of a programme of community intervention for the control of hypertension, atherosclerotic diseases, and diabetes (CHAD) which is being carried out in the framework of a family practice. The intervention is directed towards the prevention and treatment of these diseases by attempting to control a number of associated 'risk' factors, such as high blood pressure, hyperlipidaemia, and smoking. While there are now several prospective trials aiming to control these conditions, there are very limited references to organised anticipatory intervention in the framework of primary medical care.¹

The family practice in which this programme is being carried out is an integral part of the teaching community health centre in the Department of Social Medicine. Situated in Kiryat Hayovel, a neighbourhood of Jerusalem, the health centre was established in 1953 soon after this area was first developed.² The early settlers came from more than 20 different countries of Eastern and Western Europe, the Mediterranean, countries of North Africa, the Middle East, and North and South America, and some were Israeli born. At that time the main source of primary health care was this health centre.

Kiryat Hayovel is now a much larger neighbourhood, with a population of over 25,000, integrated in the city of Jerusalem and using its various health and welfare services.

The community health centre provides various services for the population of this area. These include a family practice, mother and child health clinics, school health services, care of chronically ill and home bound patients, mental health services, and general medical care for 'social welfare' cases.

The family practice combines preventive, curative, and promotive health services, the latter including health education and community organisation. It includes about 1,000 families living in four housing projects (*shikunim*) in the neighbourhood. The practice is concerned with primary health care at the individual and family levels, and care of the community by means of special community health programmes directed at the total community whether or not its members seek medical care. These special programmes include the CHAD project which is reviewed here, as well as other programmes concerned with growth and development of children, control and treatment of infectious diseases, and long-term care in chronic illness. The staff work together as a team, especially doctor and nurse, each of whom has had public health training. The health centre provides doctor and nurse clinics, consultations, treatment, laboratory and pharmacy facilities and group rooms used for student teaching as well as for community health education.

The target population

A valuable opportunity for conducting a preventive cardiovascular disease programme in this family practice arose when a health study of a total community was carried out between November 1969 and December 1971 with the support of funds from the United States Public Health Services. This study included examination of all adults in a population of 10,000 living in a defined section of Kiryat Hayovel. Apart from its research objectives it provided invaluable data for our community medicine programme.

The family practice serves 3,000 of the 10,000 people included in the study. There were more than 1,000 adults aged 25 years and over who were theoretically eligible for inclusion in the CHAD intervention programme. The adults in the remaining population (7,000) continued with their regular medical care in various services, and hence formed a control group for evaluation of effectiveness of the intervention programme. Similar basic information was available for the target and control populations.

While the intervention programme was first directed at the adults of the family practice who had been examined in the Community Health Study, other adult residents are being incorporated, including newcomers to the area and the original 20–24 year old cohort of people as they become eligible for inclusion.

Case for action

Before deciding on the incorporation of a community medicine programme such as CHAD within a family practice several aspects were considered. The first of these was the probable extent and severity of the various diseases and their risk factors, secondly, whether intervention can help, and thirdly, the feasibility of such action in this family practice.

Coronary heart disease, cerebrovascular disease, and diabetes mellitus are important underlying or contributory causes of death and morbidity in the Jewish population of Israel.^{3,4} These diseases, are also known to be common in the Kiryat Hayovel community, accounting for half the annual deaths in this population.⁵ The need for attention to these major public health problems was confirmed by the findings of the community health survey which included the present family-practice population. Confirming the findings in other studies, a greater proportion of men and women were found to have raised blood pressure and raised serum cholesterol levels than was previously known

to the practice. This was especially striking among the younger men and probably signifies that they seldom attended for care, or if they did, these measurements were not routinely made.⁶

Risk factors

Among the risk factors commonly associated with the cardiovascular diseases and their complications are high blood pressure, high serum cholesterol, decreased glucose tolerance, cigarette smoking, faulty diet, overweight, lack of exercise and some personality behaviour patterns.⁷⁻¹⁰

There is increasing evidence that some of these risk factors can be altered. These include medicinal treatment of hypertension, with lowering of the incidence of cerebrovascular disease¹¹ and obviously of hypertensive heart disease, decrease of serum cholesterol levels by dietary changes and the possible associated reduction of ischaemic heart disease.¹²⁻¹⁵

Not only do non-cigarette smokers have a lower incidence of coronary heart disease, but coronary heart disease has been reported to decline in ex-smokers.¹⁶ It is not surprising that the various preventive trials which have been started include efforts to modify these factors, and although they differ from one another in their emphasis multifactorial trials usually include several of the following elements: medication for moderate and severe hypertension, changes in behaviour such as modification of diet for reduction of weight, of serum cholesterol and glucose levels, and for control of diabetes mellitus physical exercise ranging from supervised physical training to the encouragement of activities which individuals enjoy, stopping smoking, or at least changing from cigarette smoking to pipe and cigars.

The multifactorial preventive trials have been focused mainly on middle-aged men, no doubt because of their high risk status for ischaemic heart disease.⁸⁻¹⁷ The groups chosen have varied, the Swedish trial in Göteborg includes men born during a specific period¹⁸ while the European Collaborative Group studied men in factories or other places of employment.¹⁹ It is reasonable to expect and hope that trials of similar design will be extended to women, and to their initiation in very much younger age groups.

Aims of the CHAD programme

The general aims of the CHAD programme are to reduce the risk for hypertensive and ischaemic heart disease, cerebrovascular disease and peripheral vascular disease within the framework of a general family practice, by implementing the following:

(1) a. Investigation and modification, where necessary, of the curves of distribution of blood pressure, serum cholesterol, serum glucose and relative weight in the total community.

b. Reduction of the incidence and prevalence of hypertension, hypercholesterolaemia, obesity, and cigarette smoking.

c. Identification and treatment of individuals with these cardiovascular diseases and diabetes mellitus, and in so doing aiming to prevent recurrences and complications.

(2) To encourage community response to the programme and modify community behaviour in diet, smoking, exercise, and use of medical care for the above conditions.

(3) To determine the feasibility of carrying out a multifactorial community health programme, such as this CHAD programme, within the framework of family practice, thereby developing a joint practice of primary health care and community medicine.

Specific objectives

Specific objectives in this multifactorial programme have been defined for each of the following factors:

- (1) Dietary habits,
- (2) Cigarette smoking,
- (3) Obesity,
- (4) Blood pressure and hypertension,
- (5) High serum cholesterol level,
- (6) Glucose intolerance and diabetes mellitus,
- (7) Recognition and treatment of cases with the cardiovascular diseases listed in the general objectives.

In each of these we tried to:

- (a) Carry out an initial survey to identify the nature and extent of the problem,
- (b) Introduce changes where necessary by medicinal treatment and/or behaviour change,
- (c) Arrange for confirming surveillance and periodic evaluation to answer the following questions:
 - (i) Is the team doing what it set out to do and are the prescribed programmes happening fully or partially?
 - (ii) What effects do these new activities have on the practice?
 - (iii) Has there been any change in the health status of the community as a result of the CHAD programme?

Intervention is focused on the individual and family, as well as on the community by means of community health education.

Intervention at the community level was initiated by community health workers, co-ordinated by the team's social psychiatrist and reinforced by the family doctors and nurses. The aim of the community health education programme is to change health-relevant behaviour in the community as a whole, namely modification of dietary practices in the community, changing the cigarette smoking habits, increasing physical activity and encouraging effective use of the service provided by the CHAD programme in the family practice.

The main elements of the programme are listed below. Detailed definitions of the risk factors and categories of risk are described elsewhere.⁵

(1) Dietary habits

A stratified sample of the community, consisting of about 200 individuals, had a detailed dietary interview at home by a nutritionist. The dietary survey findings and the high rate of obesity in the adults indicated the need for the following modifications:

- (a) Reduction in calorie consumption, especially sugar (sucrose), and sugar sweetened foods,
- (b) Reduction in foods with high saturated fats—in this community mainly sour cream, fat cheeses, hard margarine and butter,
- (c) Encouraging consumption of foods with low saturated-fat content such as fish, or poultry, and the replacement of high by low-fat-content milk foods. Encouraging the confirmed use of unsaturated fatty acid cooking oils used in this community and the country as a whole,
- (d) Reducing the high egg consumption in this community.

The dietary programme is directed at all adults in the community and in particular, any one found to be overweight, or with high cholesterol levels, or diabetes mellitus. The health team is considering including children in this aspect of the programme so as to discourage the formation of faulty food habits which might be determining factors for development of later risk factors for atherosclerosis.

Suitable methods of community health education within a family practice population of this kind are being explored. At present it is directed to every individual included in the CHAD programme when they attend the doctor or nurse CHAD clinics. Special small health education groups aimed at modification of food consumption have also been formed by a community health educator. Mass media and audiovisual methods have not been extensively used as the CHAD team wanted to confine this special programme as much as possible to the intervention group under their medical care.

(2) *Cigarette smoking*

The extent of cigarette smoking was determined in the community health survey. Men, aged 25–44, were the heaviest cigarette smokers in the practice population, 57 per cent being smokers and 30 per cent heavy smokers, i.e. defined as more than 20 cigarettes per day. The figures for women of the same age group were 34 per cent and 10 per cent respectively. With increase in age the prevalence of cigarette smoking declined in both men and women, but even in the age group 45–64 years, 46 per cent men and 22 per cent of women smoked, with 16 per cent and six per cent respectively being heavy smokers.

The first step was to discourage doctors and nurses in the practice from smoking, and those who smoke have been requested not to smoke in the building, especially in the clinics, offices, or places used by the community. The intention in the community is first to advise those who smoke to stop doing so and to discourage people, especially young people, from acquiring the habit. The aim is to do this with individual patients by their doctors and nurses, and by a community health educator in special discussion-groups of smokers who wish to stop smoking.

The objectives of these activities are to decrease the proportion of smokers in the community and (among persistent smokers) to decrease the mean number of cigarettes smoked.

(3) *Obesity*

We classified the population according to a standard weight, namely, the standard weight for height and sex, at age 25, as published by the U.S. Society of Actuaries.²⁰ All age groups had a high proportion of overweight persons, especially the middle aged, 45–64 group, among whom 52 per cent of the men and 73 per cent of the women were ten per cent or more above the standard weight. In the younger age group, 25–44 years, 32 per cent of men and 50 per cent of women were similarly overweight, and even in the age group 65 and over, 39 per cent of men and 64 per cent of women were ten per cent or more over the standard weight.

Our aim, therefore, was to have a community-wide programme for weight reduction (with emphasis on persons ten per cent or more overweight), and the reduction of food-stuffs with a high calorie content is done in relation to the findings of the dietary survey. For the individual patient, the target was a weight less than ten per cent above the standard. In the community as a whole, our objective was to shift the distribution of weights in the direction of lower values, and more specifically to reduce the prevalence of weights that were ten per cent or more above the standard.

(4) *Blood pressure*

We tried to measure the blood pressure of everyone in the programme and to classify them according to their risk status. Hypertension was found to be common, and our

intention is to reduce its prevalence by active intervention, diet and exercise in people who are overweight, and by anti-hypertensive drug treatment. Hypertension was defined as systolic blood pressure of 160 mm Hg or more, or diastolic of 95 mm Hg or more. We also aimed to have continuing surveillance of everyone with borderline hypertension, that is, systolic blood pressure 140–159 mm Hg, or diastolic blood pressure 90–94 mm Hg.

The aim of antihypertensive treatment was to reduce the pressure below 160/95, and if possible below 140/90. In the community as a whole, we wished to shift the distribution of pressures in the direction of lower values, and specifically to reduce the prevalence of hypertension (as defined above).

(5) *High serum cholesterol level*

All those with casual serum cholesterol levels of 200 mg per 100 ml blood or above were included in the dietary programme outlined above. If the level remained over 240 mg/100 ml the use of cholesterol reducing medicinal treatment was considered. We also aimed to continue surveillance of everyone with serum cholesterol levels between 200 and 239 mg per 100 ml.

The objective was to modify the distribution of cholesterol levels in the community in the direction of lower values, and specifically to reduce the prevalence of values of 200 mg/100 ml or more.

(6) *Glucose intolerance and diabetes*

After a screening test, and subsequent glucose tolerance test of positive cases, the population was classified as normal, 'possible', 'probable' or 'definite' diabetes mellitus. The screening test was a 75 gram glucose challenge under non-fasting conditions; a serum glucose level of 180 mg per 100 ml or more, one hour later, was taken as a positive result. Apart from treatment, dietary and insulin, of diabetics, we try to carry out careful continuing surveillance of cardiovascular status and of other 'risk factors'.

A programme outline has been written for each of the above elements. These are guides to the family physicians and nurses and provide standards against which we can measure our performance. Evaluating the intervention programme involves checking compliance with the various elements by the family practice and by the community, as well as measuring change in the distribution of the 'risk factors'.

Method

Organisation of programme

The programme was planned and is supervised by a group of co-workers of the Department of Social Medicine, consisting of those who have face-to-face contact with individuals, families or groups and those who are more concerned with ensuring sound epidemiological foundations for the programme, its surveillance, and evaluation. The clinical family practice team of doctors and nurses, a community health worker (health educator) and nutritionist were the main members having personal contact. They, with an epidemiologist, statistician, and a physician who specialises in nutrition, have been involved in all stages of the planning and supervision of the programme.

Case finding and data gathering

The clinical record of each adult (25 years of age and over) in the family practice has been reviewed. This involved summarising all past and present records of the individuals concerned and studying them with the findings of the community health study. This allowed for two kinds of analysis of data.

TABLE 1
 PERCENTAGE DISTRIBUTION OF SYSTOLIC AND DIASTOLIC BLOOD PRESSURE, SERUM CHOLESTEROL, SERUM GLUCOSE, AND STANDARD WEIGHT, BY RISK LEVEL, SEX AND AGE GROUP IN THE CHAD POPULATION

	Age 25-44 years		Age 45-64 years		Age 65 years and over	
	Male	Female	Male	Female	Male	Female
<i>Total number in group</i>	187	238	152	195	85	99
RISK FACTOR LEVEL						
Normal \leq 140 mm Hg						
Borderline $>$ 140 $<$ 159	77.5	77.3	34.9	18.5	9.4	6.1
High $>$ 160	18.2	15.5	28.3	30.8	24.7	15.2
Not known	4.3	7.2	36.8	50.8	65.9	78.8
<i>Diastolic blood pressure</i>						
Normal $<$ 90 mm Hg	70.6	74.8	37.5	28.7	27.1	19.2
Borderline $>$ 90 $<$ 94	18.2	13.4	15.8	21.0	25.9	10.1
High $>$ 95	11.2	11.8	46.7	50.3	47.1	70.7
Not known	—	—	—	—	—	—
<i>Serum cholesterol</i>						
Normal $<$ 200 mg/100 ml	58.8	50.4	21.7	14.4	22.4	6.1
Borderline $>$ 200 $<$ 239	27.8	31.5	30.9	27.7	37.6	26.3
High \geq 240	11.2	14.7	45.4	55.4	38.8	65.7
Not known	2.1	3.4	2.0	2.6	1.2	2.0
<i>Serum glucose</i>						
Normal \leq 180 mg/100 ml*	90.9	90.0	71.1	74.9	64.7	60.6
Borderline \geq 180 or possible diabetes mellitus	5.3	3.8	9.9	11.3	9.4	13.1
High* Diagnosis of diabetes mellitus	1.1	2.5	17.1	11.8	23.5	25.3
Not known	2.7	3.8	2.0	2.1	2.4	1.0
<i>Relative weight</i>						
Normal 10 percent above standard weight**	65.8	43.7	48.0	23.6	52.9	24.2
Borderline $>$ 10-19 percent above standard weight**	19.3	21.4	23.0	20.5	22.4	13.1
High \geq 20 per cent above standard weight**	12.8	29.0	28.9	52.8	16.5	50.5
Not known***	2.1	5.9	—	3.1	8.2	12.1

* One hour after ingestion of 75 grams of glucose after fasting for the previous 12 hours
 ** The percent of 'standard weight' is determined by a table of standards for height, age and sex
 *** The reason for the high percentage of 'unknown' is due to the fact that the weights of the pregnant women were not included, and in the older age-group, those men and women who were homebound did not have body measurements taken.

First, the frequency distribution of findings of the community health survey, allowed analysis of the community prevalence of such measurements as blood pressures and serum cholesterol levels and comparing them with findings elsewhere.

Secondly, by studying each individual's past clinical records with the findings of the community health survey, we were able to classify each individual according to risk status. We realised that by this means we would include some false positives, but considered this necessary for our first screening or case finding mechanism. Where only an occasional reading was in the high or borderline risk category, for example, blood pressure, we tried to carry out repeated measurements of casual blood pressure status on ten successive occasions if needed. The individual was then classified as high or borderline risk, or normal, and treatment was based on this assessment. The risk factors initially analysed in this way for the population were the levels of systolic and diastolic blood pressure, serum cholesterol, serum glucose, and relative body weight. For practical purposes they were classified as normal, borderline and high (table 1).

Raised levels of the various factors were found to be widespread in this community. Their distribution among the 956 adults included in the study is shown in table 1. Only a minority of people were normal for all and as expected these risk factors commonly occur together, especially in the middle and older age-groups where the greatest proportion manifested elevated levels for three or four risk factors.

Initiation of the intervention programme

This involves family doctor and nurse contacts in the course of their daily practice as well as special CHAD clinics conducted by the family doctors and nurses. The fact that the risk factors so often occur together led the team to decide that they should be dealt with together rather than in separate specialty clinics.

To start this programme the family physicians with the CHAD team met weekly to discuss the families who would be invited to the special session, selecting at the outset all those in which one member had at least one risk factor. Later those without evidence of risk factors ('normal' people) were also included. As far as possible and at the family doctor's discretion it was planned that adult family members would be invited together to attend the initiating session. Those who were homebound were visited by the family doctor and nurse at home.

A special health maintenance plan was prepared in advance as a guide for family or individual action.

CHAD clinics

After the individual's initial risk status has been defined, programme recommendations are planned by the CHAD team. Patients are then invited to visit their family doctor and nurse at special CHAD sessions, which are usually in the afternoons and early evenings. At these sessions the findings, especially the CHAD risk factors, are explained and discussed. The recommended care programme is then detailed with special emphasis on prevention; what they would need to do in order to comply with the programme, whether it be further assessment or investigation of some aspect such as further blood pressure measurements, modification of diet or smoking behaviour, exercise, taking prescribed medications and the importance of coming to the doctor or nurse when invited. In explaining the therapy, the importance of regular and continuous medication is stressed. In some cases individuals are already on medical or other therapy. This sometimes requires modification or even stopping it while in others it is continued.

The CHAD clinics were started in June 1971, and by end of May 1973 over 90 per cent of those eligible and available had been initiated into the programme (table 2). There was no difference in the percentage of men and women over the age of 45 years, both

TABLE 2
 PATIENTS INCLUDED IN THE CHAD PROGRAMME BY AGE GROUP AND SEX,
 (31 MAY 1973, I.E. 2 YEARS AFTER CHAD CLINICS WERE STARTED)

	Age 25-44		Age 45-64		Age 65+		Total
	Male	Female	Male	Female	Male	Female	
Initial home interview for C.H.S.*	217	259	163	207	89	108	1043
Examined at C.H.S.	187	238	152	195	85	99	956
Percent examined	86.2	91.9	93.3	94.2	95.5	91.7	91.7
Left area or died	30	27	10	5	10	11	93
Eligible for CHAD Programme	157	211	142	190	75	88	863
Included in programme	126	188	134	182	71	82	783
Percent included of those eligible	80.3	89.1	94.4	95.8	94.7	93.2	90.7

*C.H.S. Community Health Study. This initial home interview included a family/household census and hence indicates the number of people living in the family practice area.

in their responses to the community health survey and to the subsequent initiation into CHAD, the figures being for both well above 90 per cent. In the younger adults, age 25-44 years, the response of women was slightly higher than that of men.

The family nurses' CHAD clinic

In consultation with the family nurses the CHAD team decided to initiate a follow-up clinic to be conducted mainly by the family nurses. The nurses' CHAD clinic started in June 1972. At first only the chief nurse supervisor of the CHAD programme and the chief nurse of the family practice, conducted the nurse CHAD clinics. However, it was considered important that this function extends to each family nurse for her own CHAD patients. The nurses thus had two functions in relation to CHAD:

- (1) Participation at the doctor's CHAD clinic where she receives the patients, makes progress notes, weighs, measures blood pressure and carries out other procedures, and participates in the discussion on problems of CHAD related care to the attending members of her families.
- (2) At her special nurse session she carries on the routine programme, checking blood pressure, weight, taking blood for serum-cholesterol, doing electrocardiograms, dietary history, reinforcing the doctor's recommendations and discussing any problem the individual wishes, such as problems of weight reduction, stopping cigarette smoking, or unpleasant side-effects of drug medication. Five to ten people are seen at each of the three family doctor and nurse clinics.

The pharmacist of the health centre also gives instructions, taking care to explain the various prescribed drugs, their dosage, and frequency and the importance of continuity.

Access to care

At present there are two methods of seeing CHAD patients in the health centre's family practice.

- (1) At the special family doctor and nurse CHAD clinics,
- (2) Within the primary care framework of the family practice where they come mainly when 'sick' with some CHAD related condition and are usually seen by their family doctor by appointment.

Frequency of review

Patients under active treatment are seen four times a year, twice by their family doctor and twice by the family nurses. 'Normals' are invited to see the nurse once yearly and we aim to re-examine the entire community every five years.

In January 1975 there were 282 cases on active treatment as follows:

Hypertension	145
Ischaemic heart disease	112
Hyperlipidaemia	52
Congestive heart failure	10
Peripheral vascular disease	9
Cerebrovascular disease (stroke patients)	8

Many of the patients had several conditions. Thus of the hypertensives on medication, 23 had evidence of hypertensive heart disease, 32 ischaemic heart disease, 20 both ischaemic and hypertensive heart disease, 39 had diabetes mellitus, three had had strokes and another three had peripheral vascular disease; only 25 of those on medication had no condition diagnosed other than hypertension.

Evaluation*Periodic reviews of the programme*

Periodic reviews of the CHAD programme are presented at special sessions of the Department of Social Medicine. CHAD is one of several such programmes, in which care of the individual patient is being developed in a practice which is centred on the community as a whole or a defined segment of it. To this end epidemiology is being developed as an integral feature of the practice.

A weekly conference, Epidemiology-in-Practice, is the nearest equivalent we have to the traditional ward rounds of hospital teaching units. This approach to the use of epidemiology in primary health care which is both a practice and teaching session in Community Medicine has been outlined elsewhere.^{5, 21}

Progress of the CHAD programme is reviewed about four times during the year; the reviews include consideration of modifications needed in the programme itself. These may be modifications of an organisational nature or specific elements, such as changes in treatment arising from reviews of recent advances. It is at these meetings that we benefit from participation of specially invited experts, e.g. in diabetes, or hypertension.

The importance for CHAD of such meetings is that it keeps all physicians and other senior members of the department aware of the progress of this programme with paediatricians and others of the department, giving thought to possibilities of introducing primary preventive measures in childhood. It also ensures that the team responsible is continually aware of the need for review of its worth thus compelling presentation of material and reviews of literature. The material needed for such reviews is provided by continuing surveillance of health and programme evaluation.

Health surveillance and programme evaluation (S.H.A.P.E.)

In a community programme of this type conducted through primary health care it is essential to check whether we were doing what we set out to do in carrying out the different elements of the programme, i.e. what was the effect of this on the practice and on the health status of the community.

In order to help answer these questions, the following aspects have been included in the programme.

Surveillance

A record system has been devised in which the key record is the surveillance-card register which is maintained by the CHAD secretary. This records details of the various required procedures according to specified dates. Appointments are made and the required items checked when completed. This card is the key for the nurses' 'follow-up CHAD' clinics. When the patients come she reviews, and attends to, the various elements of the programme, checking on progress and referring to the physician when necessary. Continual effort is made to contact the non-respondents who are mainly the healthy younger persons, that is, those who are asymptomatic and who do not feel the need for care. In addition, there are individual progress sheets in the individual's file and drug medication cards indicating nature of drug, dosage, frequency and dates of issue, which are kept in the pharmacy for each individual.

Evaluation

Interim evaluations has been carried out during the course of the programme. Analysis of these is proceeding and will be reported separately. An example of such an interim evaluation is a review of the care of hypertensive patients initiated into the CHAD programme, a summary of which is presented in the following chart:

<i>Initiation into CHAD programme</i>	<i>Assessment of status</i>	<i>Medication</i>
Number of cases with high or borderline-high blood pressure at time of initiation	High blood pressure requiring medication: 105	Received medication: 89 —fully: 23 —partially: 66
	Borderline blood pressure requiring surveillance: 83	Did not receive medication: 16 —not put on treatment: 3 —put on treatment but did not take prescribed medicine: 13
	'Normal'. No medication nor intensive surveillance: 65	
	Further assessment of status still required: 92	

Details of the programme for assessment of blood pressure status and antihypertensive medication have been outlined elsewhere.

We began undertaking in February 1975, a second round of health examinations of those who were examined in the initial total community health survey (1969-71). This will provide for a controlled evaluation of the CHAD programme in comparing our family practice population, who are eligible for inclusion in CHAD with a sample of the remainder of the population of Kiryat Hayovel who live in adjoining neighbourhoods and receive their medical care through regular sickness insurance fund arrangements, in the main from the area clinic of the sick fund of the Federation of Labour Unions. Baseline and end-point data (on blood pressure, cholesterol levels, serum glucose, weight, height and skinfold thickness) will be available for comparison of the CHAD and other population groups. This controlled evaluation is being performed as a self-contained study in association with the Brookdale Institute of Gerontology and Adult Human Development in Israel.

We also have initiated continuing monitoring of hospitalisation and the hospital diagnosis of cases discharged, and of mortality records for causes of death. This is being done both for the CHAD 'intervention' and 'control' populations. It covers the five to six year period between the first and second rounds of the community health survey, and it is planned to continue with this monitoring system.

Discussion

Long-term programmes for the control of cardiovascular diseases are now being subjected to trial in several studies. While there is general agreement that a strong case exists for the well controlled trials that are being carried out, opinion is divided on the justification of screening and widespread treatment of the cases that may be found in this way. Some epidemiologists want more evidence before advocating such measures.^{22, 23} Others, feeling the urgency of the problem, such as hypertension, emphasise the need for more attention to its recognition and treatment.²⁴⁻²⁸

A programme of the kind we have outlined precludes some of the dangers of mass screening, while including its best features, namely, recognition of previously undiagnosed abnormalities by a physician or primary care health team who know their patients. It is also designed as a trial. A control population has been defined and examined, and evaluation of various aspects of the programme is being undertaken.

However, it differs from the multifactor preventive programmes which have been mentioned in the introduction to this paper in that it is focused on all the adults of a family practice. As stated before, a main objective is to gain experience in how to integrate community medicine with primary health care by the use of epidemiological and clinical skills and thereby develop satisfactory methods of surveillance of health status and evaluation of care of the community registered in a family practice or other kind of primary health care.

The implications of such programmes are of importance to the primary health care practitioner in that they develop the possibility of providing community-oriented care through an existing health care framework and obviate the necessity for the development of separate services. Such programmes should be adapted to their settings, and therefore will not necessarily include all the components described in this paper. The extent to which screening and diagnostic procedures in addition to management can be integrated into primary health care practice will vary in different situations.

In a programme such as CHAD time and effort are needed for creating a system of surveillance of a group of diseases and the risk factors for these diseases. The more common and the more serious the implications for the community's health status, the more justifiable it is to make such an investment. However, active intervention demands more than this. If a family practice is to intervene and try to change the situation there must be evidence to the effect that such action is likely to be effective, and certainly not harmful.²⁹

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TREATMENT OF DEPRESSION

An analysis of the treatments prescribed to three different groups of patients suffering from depression suggests that psychotropic drugs are often used inappropriately in general practice. This view is confirmed by the opinions expressed by a group of general practitioners who were also questioned. The reasons for drug defaulting by patients were also explored.

It is suggested that in the setting of urban general practice the potential for the traditional family-doctor patient relationship is strictly limited, and that in practice the interest in, and knowledge of, psychiatry and psychotropic drugs is relatively small.

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