RF_COM_H_49_A_SUDHA

DR. DARA S AMAR. M.D.*

SCOPE OF OPERATIONAL RESEARCH TECHNIQUES IN MEDICAL COLLEGES.

INTRODUCTION:

The term 'operational research' was coined during the World War II in connection with the best use of a new invention, the radar, Since the war, the term has spread rapidly in Britain and America and it has come to mean today more than the study of the use of new inventions - the study of the whole systems of services rendered in industry, administration, education and health services.

Operational research is defined as the application of scientific methods of investigation to the study of complex human organisations and services.

In operational research, one is concerned all the time with the activities of a group of people with the purpose of inducing beneficial changes. Thus, operational research is a sociological science, and has an immense social content which distinguishes it from pure or applied research. The main objective of operational research is "to develop new knowledge about institutions, programmes, use of facilities, the people working in these activities and the individuals and communities served by them, in order to secure optimal utilisation of resources in men, material and money in the service of the community." A new area of operational research is emerging, i.e., "health operational research.

PRINCIPALS:

1. It is an omnibus,(interdisciplinary)that takes to any branch of science.
2. 'One man with idea is as much as 100 having merely interests.
3. It mistrusts verbal arguments and substitutes algebric reasoning for verbal wrangling.
4. It believes "Problems are plenty but practical actions available is restricted and so" get the best of the worst bargain"
5. It often yields rather bad answers but improves on existing worse ones.
6. It unmasks hidden incompatibilities in the complex of organizational goals and targets and chooses right priorities.

*Asst. Professor, Dept. of Community Medicine, [illegible] Medical College, Bangalore.

PHASES IN OPERATIONAL RESEARCH:

The procedure to be adopted in operational research differs according to the nature of the study. The usual procedure adopted generally consists of the following phases.

1. Formulation of the Problem
2. Collection of relevant data, if necessary, by a suitable sample
3. Analysis of data and formulation of hypothesis
4. Deriving solutions from the hypothesis or "model"
5. Choosing the optimal solution and forecasting results.
6. Testing of solution, e.g., pilot projects
7. Implementing of the solution in the whole system.

COMMON OPERATIONAL RESEARCH TECHNIQUES:

I. Linear Programming (L.P.) Often termed as an Optimization technique, Linear Programme helps to achieve the following:

a) To minimize the INPUT in terms of resources
b) To maximize the OUTPUT in terms of work done
c) To achieve an optimum "mix" of various resources subject to constraints.

When the number of resources being studied to determine the optimum "mix" (or proportion of each resource to be used) is only two resources, then the 2-dimensional method may be employed as described in the example. However, in reality, the number of resources used are inevitably more than two in number. For such situations, there are Linear Programming techniques that involve multi-dimentional arrays. The principle of calculation is simple but the quantity of calculations to be done becomes laborious and time-consuming and therefore recourse to a computer is often necessary. Some examples of situations where Linear Programming techniques may be employed:-

1. Optimum 'mix' of various drugs in T.B. Chemotherapy, keeping in view constraints of cost, availability, potency, side-effects etc.
2. Optimum "mix' of medical/paramedical staff in a Department keeping in view constraints of salary cost, job requirements, qualifications, experience, patient needs etc.
3. Maximal coverage with limited staff/other resources.

DR. DARA S AMAR

LINEAR PROGRAMMING (2-dimensional or simplex method)

Problem:

Two types of protein foods (C_1 and C_2) are being made for a nutrition programme. C_1 is cheap but contains less protein than C_2 which is costlier. What is the optimum mixture of C_1 and C_2 which will maximise the profit function(p) (profit values measured in terms of grams of proteins).

$$P = 2x + 3y$$

(Where x and y are the respective number of units of C_1 and C_2. to be mixed, given the condition that each unit of C_1 has 2 grams of protein and C_2 has 3 grams of protein.

Thus we have to find out the optimum values of x and y that will give the maximum value for p(profit) (i.e. maximum amount of protein). In other-words, for every unit of the cheap C_1 food, how many units of the costlier C_2 food must be added, to get the maximum amount of protein (i.e. what is the optimum proportion) given the following constraints in 2 resources (e.g. two types of raw material for C_1 and C_2.

TABLE OF CONSUMPTION OF MINIMUM RESOURCES FOR C_1 and C_2 foods

	Units of Resources(R)	
	R1 = Material(1)	R2 = Material (2)
Minimum resources input per unit of Food C_1	3	2
Minimum resources input per unit of Food C_2	2	4
Minimum total resources input for 'x' units of C1 and 'y' units of C2 (i.e. proportion)	3x + 2y	2x + 4y

Constraints:-

(We cannot make just any type of proportion of C_1 and C_2 (i.e. x & y) to give highest protein mixture because of the following resource constraints)

(1) The ceiling on material (1) (i.e. R1) for any proportion of C_1 and C_2 (i.e. x & y) is 7 - i.e. $3x + 2y \leq$ (i.e. cannot exceed) 7

(2) The ceiling on R2 (material (2)) for any proportion of C_1 and C_2 (i.e. x & y) is .10

i.e. $2x + 4y \leq$ (Cannot exceed) 10

Solution:

So we have 3 algebric equations:-

i.e. i. $3x + 2y = 7$
ii. $2x + 4y = 10$ } Constraint Equations
iii. $2x + 3y = P$ Profit function equation

Let us now plot the constraint equations in a graph paper and solve the profit function equation from the graph:

Graph Co-ordinates:

Eq.(i) Let x coordinate be = 0

$\therefore 3x0 + 2y = 7$

$\therefore y = 7/2$

Let y coordinate be = 0

$3x + 2x0 = 7$

$\therefore x = 7/3$

Co-ordinates for Eq. (i)

(xy) = (0, 7/2)
(xy) = (7/3, 0) } Eq. (i)

Eq.(ii) Let x coordinate be = 0

$2x0 + 4y = 10$

$\therefore y = 5/2$

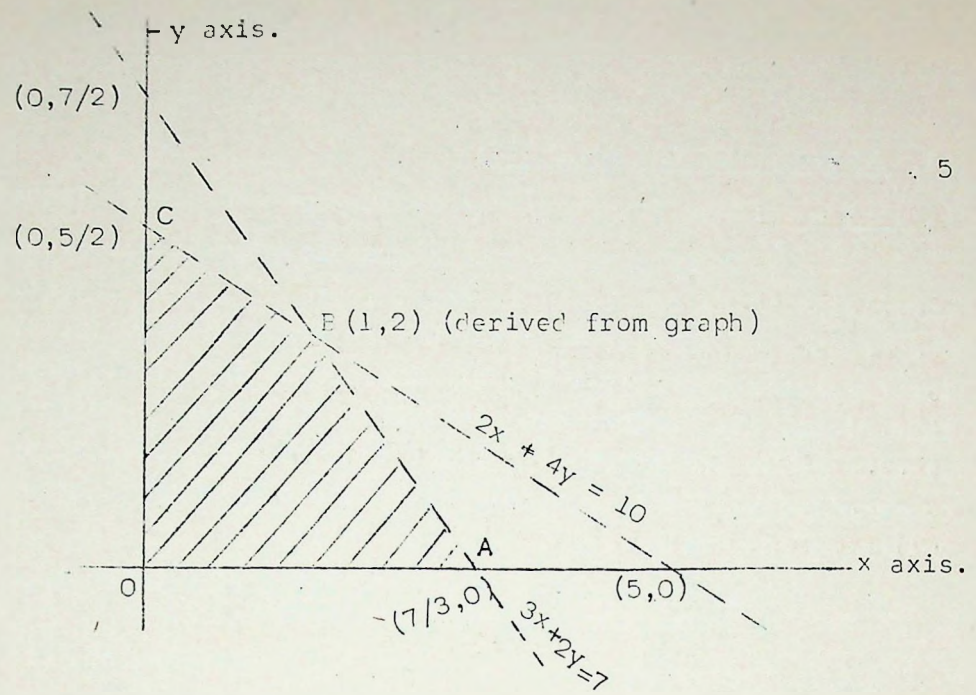
Let y coordinate be = 0

$\therefore 2x + 4x0 = 10$

$\therefore x = 5$

Coordinates for Eq.(ii)

(xy) = (0,5/2)
(xy) = (5,0) } Eq. (ii)



To Optimise P=(i.e. Max. amount of Protein)

Substitute the co-ordinates values in Equation(iii) consecutively at points O, A, B, C and find out the point where the P value is maximal.

Point O: $2x + 3y = P$

$0 + 0 = P$

$P = \underline{0}$

Point A: $2x + 3y = P$

$2x7/3 + 3x0 = P$

$\therefore P = \frac{14}{3} = \underline{4.66}$

Point B: $2x + 3y = P$

$2x\ 1 + 3x2 = P$

$\therefore P = \underline{8}$

Point C: $2x + 3y = P$

$2x0 + 3x\frac{5}{2} = P$

$\therefore P = \frac{15}{2} = \underline{7.5}$

$\therefore$ Maximal Value of P = 8 (occurs at point B)

$\therefore$ Substituting Co-ordinates of B in Eq.(iii)

$2x + 3y = P$

$2(1) + 3(2) = 8$

Optimum Proportion of C_1 and C_2 = 1 unit of C_1 for every 2 units of C_2

II. PERT/CPM NETWORK ANALYSIS:

1. PERT - acronym for programme evaluation and Review Technique,

It is a network or a graphic plan of all events and activities to be completed in order to reach an end objective. The essence of PERT is to construct an Arrow Diagram (refer example). The diagram represents the logical sequence in which events must take place. It depicts some activities that may be performed simultaneously and other activities that can be performed only consecutively. It is possible with such a network to gain the following answers:-

a) Determining the probability of meeting specified deadlines in your programmes.

b) Planning, scheduling and monitoring the project.

c) Determining the latest and earliest starting and finishing time deadlines for individual activities and workers, keeping in view the deadline for completion of the entire project or programme.

d) Better and more specific job descriptions in a project (i.e. number, kind and sequencing of job activities)

e) Continuous timely progress reports.

f) An ideal system for evaluating the project.

g) PERT identifies trouble spots, often in advance, and pinpoints responsibility.

2. CPM - acronym for critical path method. This is the Longest path in the PERT Network, in terms of time taken to complete the activities. If any activity along this critical path is delayed, the entire project will be delayed. Whereas PERT only provided an in depth time - analysis of the project, CPM helps to determine a time schedule at minimum cost. i.e: it helps in calculating the OPTIMUM cost that needs to be incurred if the project is to run at the Optimum duration.

Thus PERT and CPM are tools in dealing with the TIME and COST analysis of a project.

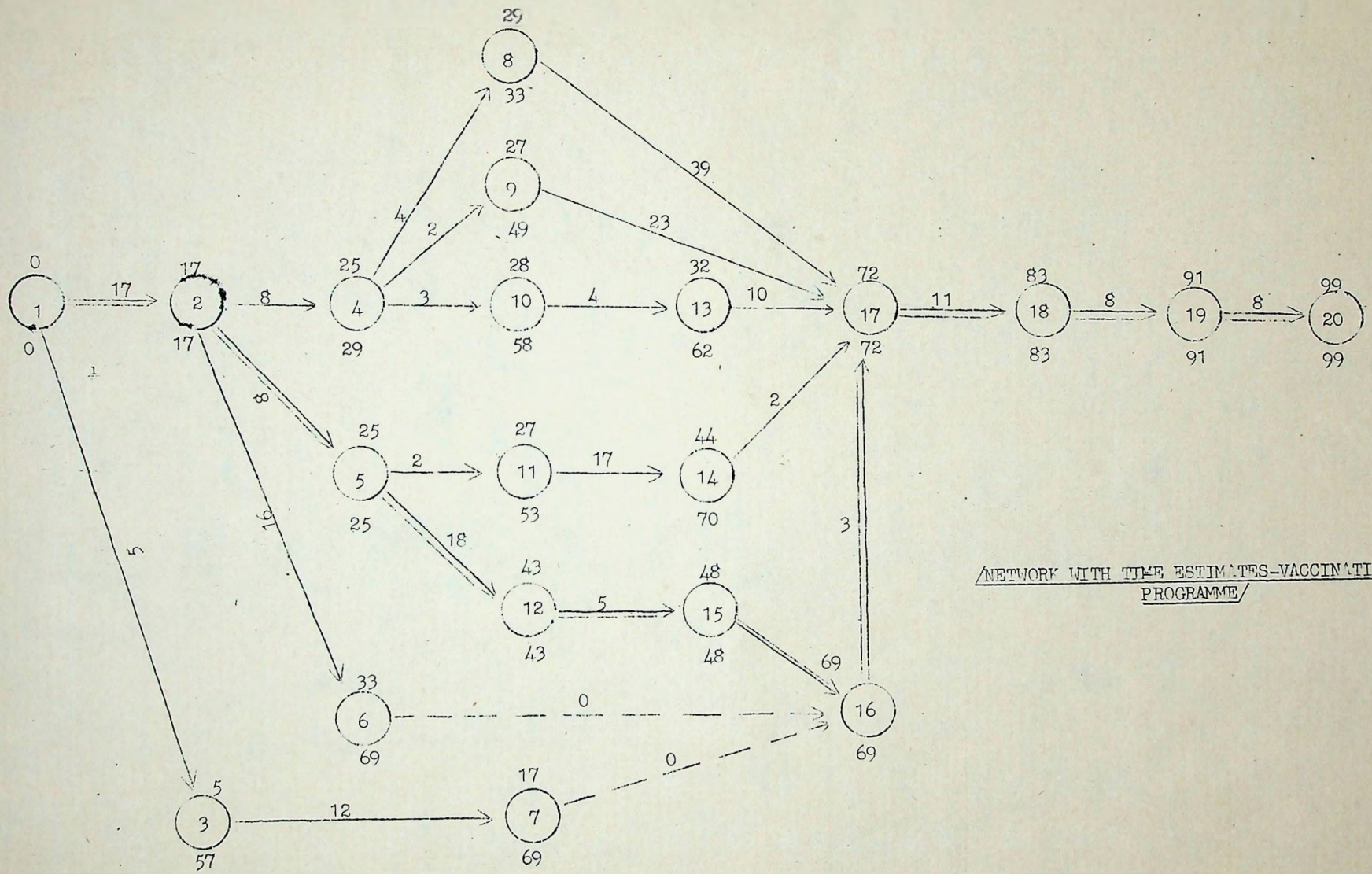
Examples of PERT/CPM usage cover all activities of a Medical College extending from the administrative procedures to teaching time schedules, departmental programmes, laboratory proce-d-ures, patient care systems, rural and urban health programmes, planning for research projects etc. A few areas that are small enough for PERT/CPM trials:- a) An immunization camp b) planning for a short course/training programme c) organizing a new department d) upgrading a unit (e) movement of vehicles during a normal week of college work [illegible] (g) planning a work [illegible] schedule for

NETWORK-BASED TIME ESTIMATES FOR VACCINATION PROGRAMME

Predecessor Event	Successor Event	Activity Description	te (days)	E.S.	E.F.	L.S.	L.F.
1	2	Survey the population	17	0	17	0	17
1	3	Prepare policies and procedure for records and reports	5	0	5	52	57
2	4	Get the vaccinators into postition	8	17	25	21	29
2	5	Prepare estimates of vaccine, equipment, vehicles, etc. required	8	17	25	17	25
2	6	Procure vehicles on loan from other departments and get them into position	16	17	33	53	69
3	7	Get the forms printed	12	5	17	57	69
4	8	Plan public meetings	4	25	29	29	33
4	9	Plan strategy to obtain the cooperation of community leaders	2	25	27	47	49
4	10	Orient vaccinators with respect to project, plans, jobs, etc.	3	25	28	55	58
5	11	Place an order for vaccine	2	25	27	51	53
5	12	Call tenders for equipment	18	25	43	25	43
10	13	Assign population and post vaccinators	4	28	32	58	62
11	14	Receive vaccine	17	27	44	53	70
12	15	Give contract for equipment	5	43	48	43	48
14	17	Deliver vaccine at PHC	2	44	46	70	72
15	16	Receive equipment	21	48	69	48	69
16	17	Deliver equipment at PHC	3	69	72	69	72
8	17	Conduct public meetings	39	29	68	33	72
9	17	Motivate community leaders	23	27	72	49	72
13	17	Help vaccinators to develop rapport with the community	10	32	42	62	72
17	18	Vaccinate	11	72	83	72	83
18	19	Review performance	8	83	91	83	91
19	20	Prepare project report and submit	8	91	99	91	99

E.S.= Earliest Start; E.F.= Earliest Finish; L.S.= Latest Start;
L.F.=Latest Finish

- - - - -



NETWORK WITH TIME ESTIMATES-VACCINATION PROGRAMME

III: QUEING THEORY

The above technique deals with questions relating to the following:-

1. Types of Ques
2. Factors in Que formation
3. Minimizing Que lengths.

There are different types of Ques and each is governed by such factors as Que discipline, Service capacity etc. The following is a simple Que system based on the "First come - first Serve" Basis. The formulae relate to the calculation of certain important parameters in Que Control.

Example: A given out patient department of a Hospital, functions for 8 hours per-day(H). Based on a sample survey of this OPD, the following figures were calculated:-

(A) Arrival Rate of patients joining the OPD Que = 4 patients/hour

Number of doctors serving OPD = 1

(S) Service Rate of patient(i.e. No.of patients that doctor sees in an hour) = 5 patients/hour

∴ (W) No. of patients waiting in Que at any given moment

$$= \frac{A^2}{S(S-A)} = \frac{4^2}{5(5-4)} = \underline{3.2}$$

∴ Average waiting time per patient $= \frac{W}{A} = \frac{3.2}{4} = 0.8$ hours or 48 minutes

∴ Total No. of patients in OPD Area

(i.e. No. of patients waiting outside + No. of patients being seen by Doctor) =

$$= \frac{A}{S-A} = \frac{4}{5-4} = \underline{4 \text{ patients}}$$

Service time of Doctor (i.e. No. of hours the Doctor is actually at work) $= \frac{A}{S} \times H = \frac{4}{5} \times 8 = 6.4$ hours or (6 hours 20 mins.)

∴ Idle time of Doctor = (H - Service Time) = 8-6.4

= 1.6 hours

or

1 hour 36 minutes

IV. MONTE CARLO SIMULATION

1. Meant to be used for solving problems too expensive for experimental solution and too complicated for analytical treatment.

2. Many real-life systems are so complicated that it is all but impossible to transcribe them in mathematical equations or to solve the equations even if they could be so transcribed. Therefore in such cases, a step by step verbal description of the sequence of actions is often possible. It is such situations that Monte Carlo Technical simulation has been designed to handle. In particular it provides simple possible solutions for queing problems which are otherwise intraitable.

3. Monte Carlo simulation is a recent operations-research innovation. The novelty lies in making use of pure chance to construct a simulated version of the process uncer analysis, in exactly the same way as pure chance operates the original system under working conditions.

4. The essence of Monte Carlo simulation is to use random-number tables to reproduce on paper the operation of any given system under its own working conditions.

5. The selection of such a random sample is the heart of Monte Carlo method.

6. One way of avoiding the tedium and fatigue of an enormous number of trials is to resort to computer simulation.

7. A moderately fast computer could simulate withing one minute 100 trials, and a really high-speed one as many as 5,000 trials.

8. The accuracy of a Monte Carlo approximation improves only as the square of the number of trials. To double the accuracy of the estimate the number of trials. has to be quadrup led; to treble it they must increase ninefold, and so on.

9. It is often an adequate substitute for the purely mathematical formalism and enables us to predict not only the number of customers likely to arrive during any stipulated period but also the very instants at which they do.

V. INVENTORY CONTROL: This is a technique in the realm of materials management. The technique helps to solve the following problems in the stores and purchase sections for Drugs, Stationary, Instruments, linen, furniture, lab-reagents vaccines, catering section etc.

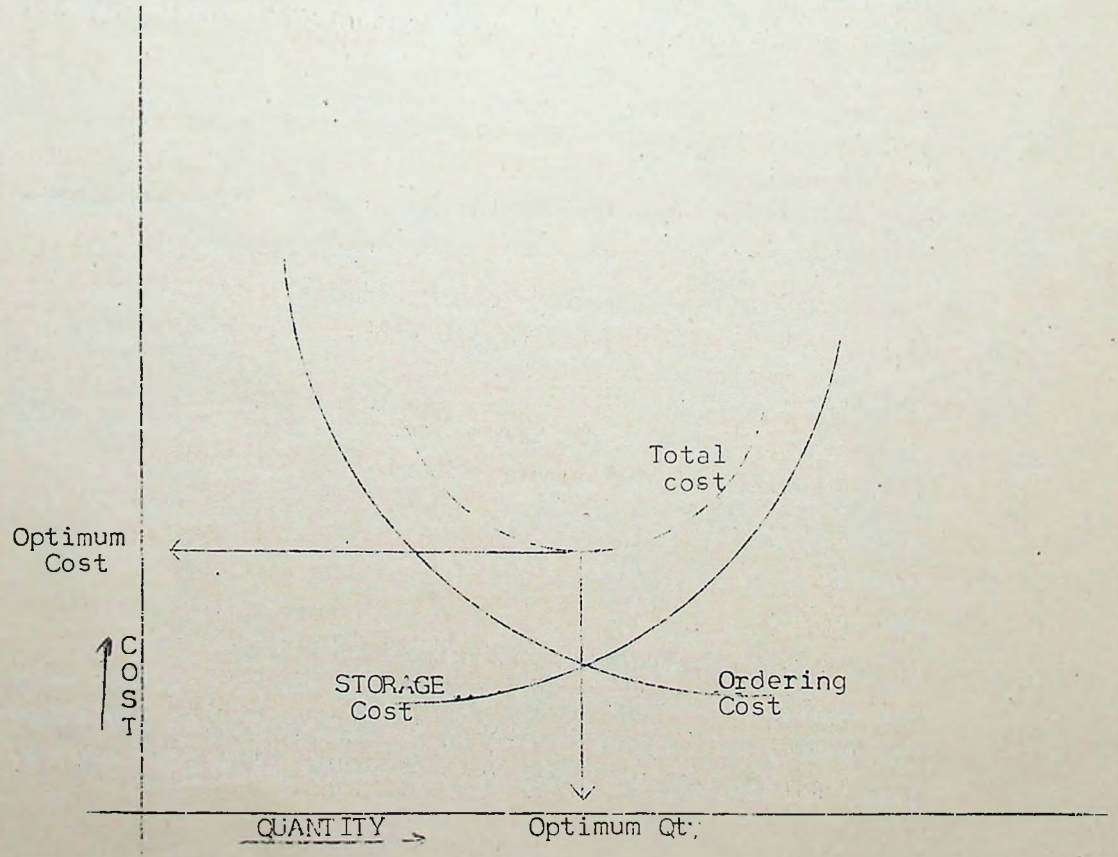
a) Whether to buy all at once or at intervals (analyses demand)patterns

b) Whether to hold buffer stocks and if so how much (considering budget limitation, utilization rates etc.)

c) Calculating probabilities of shortage of individual items in stores and therefore making alternative plans.

d) How many orders to place per unit time (e.g. per month) taking into consideration delays due to quotations, administrative lag time, Delivery lag time etc.

e) Calculating Optimum quantity of goods to order keeping in view that bulk orders cost less per unit than frequent small orders. (Refer diagram below)



Review of currently available literature

Operations Research studies in the field of Health Services, reveals a predominance of hospital based studies. However, even those studies are confined to a few large hospitals only. The following is a list of components in the Health Services system provided by most medical colleges that may be subjected to Operations Research in order to improve their functioning. Many of these components have already been studied and some others are in the process of being studied. However as mentioned earlier, data on such studies are limited.

1. Activity analysis of various categories of workers in the health care system.
2. Studies towards determining the norms of work-load in terms of quantum and range of services to be provided, population to be covered etc., for different categories of health personnel at all levels.
3. Studies on rationalization of staffing patterns keeping in view the work-load.
4. Utilisation and maintenance of physical facilities, equipment and vehicles in all the institutions of health care system.
5. Utilization of hospital beds.
6. Studies on waiting time problems in hospitals and health centres.
7. Studies for development of systems for indenting, storage and retrieval of medicines and drugs (inventory control and materials planning).
8. Studies for optimal scheduling and deployment of vehicles (net work) for rural health services.
9. Studies for scheduling and deployment of vehicles for emergency services.
10. Scheduling of patients in outpatient departments of hospitals and health centres.
11. Scheduling of Operation Theatres.
12. Inventory control system for X-ray, Laboratory materials, stores, blood bank etc. in hospitals.
13. Diet planning in hospitals.
14. Studies on allocation of resources in terms of beds, nurses, Operation Theatre time etc. to different specialities.
15. Cost analysis of health care activities.
16. Cost analysis of different hospital services.
17. Cost of training of different categories of health workers including professionals.

18. Economics of scale in hospitals, medical colleges and schools for nursing and other categories of health workers.

19. Cost-benefit analysis and cost-effectiveness analysis of hospital services.

20. Cost-effectiveness analysis of different training programmes.

21. Studies towards development of suitable management information systems for individual hospitals and health care institutions.

22. Feasibility studies for introducing performance budgeting.

23. Studies in quality of health care services towards development of standards for quality of health care.

24. Studies in quality of medical care in hospitals.

25. Patterns of private expenditure or health care services by the population.

26. Studies on optimum span of control for different levels of health services organisation.

SOME CONCLUSIONS

1. Operation Research is a betterment of exhisting "plans" and so can be called a scientific criticism of exhisting organization. So the Operation Research man has to be careful in putting his ideas across and be very "TACTFULL".
2. Results of Operation Research must be done fast as it relates to "exhisting and now" condition and not some future. Therefore it is ever changing and dynamic.
3. Most of Operation Research is "Common Sense" and therefore requires only basic mathematical reasoning (mostly algebra)
4. To make use of Operation Research, it needs "courage" as one has to "change" age old so called "safe" traditional methods.
5. Most of us use Operation Research daily, without even being aware of it.

* * * * * *

EVALUATION - THE NEED, ITS VALUE AND METHOD

By Dr. Dara S Amar.

1. What is Evaluation?

Evaluation, in lay language, would mean the separation of the most valuable from the less valuable and the value-less.

Evaluation measures:-

1.1 The degree to which objectives and targets are fulfilled

1.2 The quality of the results obtained

1.3 The productivity of available resources in achieving objectives

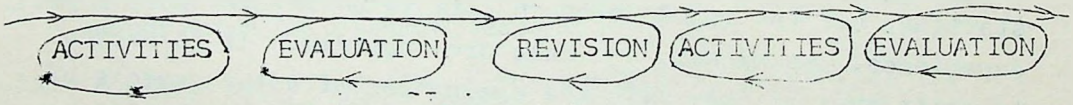
1.4 The cost effectiveness achieved.

Evaluation makes possible the reallocation of priorities and resources on the basis of changing health needs.

2. Types of Evaluation:

2.1. Pre-evaluation: It is necessary to establish a baseline at the beginning of a programme against which to measure the results.

2.2 Concurrent evaluation: Evaluation should not be left to the end but should be made from time to time, so that if the programme is not progressing successfully, modifications can be made. The programme moves thus:-



2.3 Terminal evaluation: The evaluation of the ultimate achievement of the programme in terms of objectives and sub-objectives fulfilled and the extent of planned activities carried out.

Evaluation may be approached from the following angle too:-

2.4 Evaluation of structure and organization.

2.5. Evaluation of the Process

2.6. Evaluation of the results.

...2

RW/17/12

3. Tools used for Evaluation:

3.1 Observation schedules
3.2 Records and registers
3.3. Work diaries
3.4 Personal interviews
3.5 Health Examination
3.6 Discussions
3.7 Questionnaires.

4. Provision for Evaluation in your programme:

The following provisions must be made at the stage of planning itself.

4.1 Person responsible for evaluation should be specified.
4.2 Amount of time, the personnel can give for evaluation work.
4.3 The funds available for evaluation
4.4. Stages of the programme at which evaluation will be done
4.5 Is there a provision in the planning, for making either major or minor modifications in the programme, depending on the "feed-back" from the evaluation.

5. The process of Evaluation:

A systematic procedure should be followed in evaluating any programme. The theoretical concept of evaluation is relatively simple but its practical application can be very difficult, too often, these difficulties have been used as excuses for not starting, but the right approach is to begin; for once begun, experience, techniques, and data grow rapidly. It is better to start even if only with the evaluation of a few aspects of some activities of a programme, than never to have started at all.

The basic steps in evaluation are as follows:

i) Statement of objectives
ii) Establishment of Baseline Data
iii) Measuring coverage and Utilization of services
iv) Evaluating utilization of Resources
v) Evaluating Activities and Attitudes of the programme staff and public
vi) Measuring effectiveness of programme
vii) Measuring efficiency of programme.
viii) Collection of Data
ix) Analysis of Data
x) Presentation of Results and Recommendation.

....3

5.1 Statement of objectives:

Since evaluation is related to and dependant on objectives, the statement of objectives must be sufficiently specific to be measured. In fact, the more specific the objectives, the better the evaluation. Two levels of objectives are distinguished.

a) General objective (or aims) which may or may not be measurable.

b) Specific objective which are measurable.

General objectives only set out the main intentions but not the details.

eg: To provide preventive, promotive and curative health services to the community.

Specific objectives set out measurable details. The following are the criteria for making specific objectives.

5.1.1 A clear definition os what is to be attained; for example,/* /*"primary vaccination" of all children before they are six months of age.

5.1.2. A clear statement of the amount or degree of intended attainment; for example, 100% of the children must have primary vaccination before each child is six months old.

5.1.3 A clear statement of the time in which this degree of attainment; is expected; for example, "between I July and I September 1963".

5.1.4 A clear specification of the geographic location of the programme; for example, Bata Village.

5.1.5 A clear specification of the particular people, or the portion of the environment, in which the objective is to be attained; for example, the parents of all children under six months of age should have these children vaccinated.

The objective might read, "To persuade parents of children under six months of age in Bata village to have all these children (100%) vaccinated between I July and I September 1963". Sub-objectives might include the following:

I) "To carry out a house-to-house survey of the village in order to list the names of all the infants under six months."

2) "To identify leaders especially among the women who can assist with this survey."

The programme's success depends on accomplishment of the sub-objectives. Sometimes a sub-objective may not be directly related to health. If the objective were "To get 50% of the restaurants in a given locality to reach a specified level of cleanliness in one year", one sub-objective might be "To have restaurant owners buy new uniforms for the staff".

....8

5.2 Establishment of Baseline Data:

Often termed as "pre-evaluation", it measures the current Health Status and needs of the community so that these may be compared again at the end of the programme in order to measure the changes in health status and fulfillment of the needs of the community.

The Health Status of the community is usually studied by collecting data on:-

i) Age/Sex distribution of population
ii) Mobility of population
iii) Socio-economic levels and factors prevalent
iv) Birth Rate
v) Death Rate
vi) Morbidity Rates
vii) K.A.P. Surveys.

The needs of the community may be ' PERCEIVED needs(i.e. the people themselves perceive the need for the programme) and PROFESSIONAL needs (i.e. what the medical professionals believe are the needs of the community). Most often both the needs are beyond the capacity of the resources available for the programme. Whereas the change in the Health Status of the Community at the end of the programme, can be measured quantitatively, the measurement of the "fulfillment" of the needs is often qualitative and therefore subjective. Nevertheless, an effort must be made, since without the Baseline data, evaluation cannot begin.

5.3 Measuring Coverage and Utilization of Services:

This is often referred as measurement of the "adequacy" of the programme. The three components measured here are:

i) Geographical coverage
ii) Population coverage
iii) Utilization rate of the programme services.

5.3.1 Geographical coverage: This refers to the geographical distribution of the people who make use of the programme services e.g. Catchment area of a hospital. If the geographical area of coverage is large, it could mean

...5

i) Your programme is popular
ii) Your programme is more of a specialized nature which is generally not available.

5.3.2 Population coverage: This refers to proportion of the whole population, who are eligible for your programme services. If your programme is specialized, the coverage is low (eg. only maternity services) but if your programme is of a general nature (e.g. Community development projects) the coverage is often 100%.

5.3.3 Utilization Rate: Not everyone eligible for your programme service, will necessarily use your services, therefore it is necessary to measure the proportion of the eligible population who make use of your services.

5.4 Evaluating utilization of Resources:

Resources are men, material, money and time. These form the inputs that is consumed or utilized to produce the output of the programme. Merely because resources are consumed rapidly, does not signifiy that your programmes is progressing equally rapidly. What needs to be evaluated or measured, are the following criteria.

5.4.1 Quantity of Resources available/used.
5.4.2 Quality of Resources available/used.
5.4.3 Rate of utilization of resources in relation to programme phases/duration.
5.4.4 Distribution of Resources

(The use of resources in measuring the EFFECIENCY of a programme is denoted later)

Evaluation of resource utilization and its optimization can be carried out using techniques in the realm of operations Research, cost effectiveness studies etc, which are beyond the scope of this present paper.

5.5 Evaluating Activities and Attitudes of staff and Public;

5.5.1. Activities: These are the number of items of work (eg. vaccinating children, making home-visits, registering births etc) The evaluation of the activities, to measure their usefulness /time in terms of the/spent per activity per worker, outcome of activity, sequencing of activities etc. are termed as work study analysis. This is a specialized technique. Another technique

...6

that may be used is the O and M technique or the organization and methods evaluation which measures such matters as division of work, delegation of authority, co-ordination, etc. Another type of activity analysis which is increasingly used is the P.E.R.T./C.P.M. or programme evaluation Review Technique/ Critical path method in Operations Research. Detailed reviews of the above techniques are available in specialized texts.

5.5.2 Attitudes: This is most often ignored in any evaluation, mainly because of its difficult and subjective nature. The techhiques employed are usually in the form of questionnaires that are framed to provide unambiguous replies and the method of filling the questionaires is through direct personal interviews and discussions. However, unless the people are well informed and sufficiently knowledgable on the matter, most of the responses are guarded, generalized and do not reflect true attitudes of the people. Though very difficult and subjective, the technique of direct observation combined with the above technique, aids in arriving at a fair diagnoses of the changes or otherwise of the attitudes of the people towards the progress of your programme:

5.6 Measuring Effectiveness of the programme:

Very often, due to constraints on resources and often due to faulty management, many of the objectives planned ** at all or only partially so. Measurement of the EFFECTIVENESS, using the following proportion formula, often serves as a rough guide to your achievement.

** at the beginning of the programme, are often not accomplished

$$\text{Effectiveness} = \frac{\text{No. of objectives actually achieved}}{\text{No. of objectives originally planned.}}$$

To have an idea of the extent of individual objectives achieved, the percentage coverage of each objective may also be calculated.

5.7 Measuring efficiency of the Programme:

This constitutes the most important factor for evaluation of your programme, as far as your funding agency is concerned. It relates your programme output to the money spent forthe programme. However, since money is not the only important consumable resource, the following proportion formula must be individually calculated for money, materials, men and time !!

... 7

Efficiency = $\frac{\text{No. of objectives actually achieved.}}{\text{Total cost (direct \& indirect) actually expended.}}$

5.8 Collection of Data: So far, we discussed WHAT data to collect for evaluation of a programme. The following points constitute the main criteria in the actual methodology of collecting the data:-

i) How should the date be collecte?
ii) When should the data be collected?
iii) From whom should the data be collected?
iv) By whom should the data be collected?

5.8.1. How------ -?: This is usually in the form of a health survey for which there are 4 approaches:

i) Using exhisting records/registers for gathering data.
ii) Using Questionaires containing unambiguous and well structured questions.
iii) Personal interviews and discussions
iv) Health examination of individuals.

5.8.2. When-------?: Two points to be remembered are

i) Season of the year: eg. If the baseline data ia collected during an epidemic of cholera, the morbidity rate will be unusually high.

ii) Evaluation procedure: Is the data gathering a continuous procedure throughout the year or is it episodic?
It is preferable to collect basic data continuously (to overcome problem(i)) but a more detailed data collection must be carried out at predetermined intervals. Thus the workload of the data collecter is not continuously overburdened.

5.8.3 From whom.-----?: Obviously, larger the number of sources and people from whom data is collected, better would be the evaluation. However, practical constraints in resources may necessiate the employment of SAMPLING TECHNIQUES. Thus "populations at risk" may be measured first due to the economy achieved. If, however, your programme is a unique and innovative type, then a group of matched CONTROL population must be simultaneously studied in order to claim the unique benefits of your programme.

....8

5.8.4: By whom-----?: This is entirely dependant on the resources available for your programme. A lot of project leaders feel that an independant group of staff, not involved with the programme, must do the evaluation in order to avoid any biassed opinions. Though this method may be theoritically sound, its practical implication can be often futile and useless. The reason being that many of the project workers "feel" that an "outsider" knows little about the actual conditions of work and so his evaluation and recommendations are not always right. In order to avoid such "discontent" in the organization, a PART of the evaluation team must consist of the project workers (actual field- workers and NOT project leaders/consultants!) so that a balanced opinion and analysis is made.

5.9: Analysis of Data: Before analysis, the data must be "collated" ie: checking of completeness of data and sequencing and tabulation of the data collected. The work of collation can go on simultaneously with data collection and not be left to the end.

The amount and type of analysis required will depend on the problem and complexity of the programme and can vary from simple tabulation to complex analysis of multiple variants. The services of a statistician is often required.

6. Presentation of Results and Recommendations:

The presentation of the evaluation report depends upon for whom it is sent. If it is to the project agency, then it must contain all details but if it is for publication then a lot of summarization is required. The report should, however, generally follow the criteria stated below:

6.1 Be brief as possible

6.2 Results must be tabulated simply

6.3 Emphasize practical implications rather than theoritical discussions

6.4 Emphasize improvisations especially for field workers.

6.5 Make clear, practical recommendations.

6.6 Illustrations in the form of graphs etc. should be used.

6.7 Figures in tables must not be repeated in the text.

6.8 The FORMAT of the report should be as follows:

- Summary of Report
- Aim of Evaluation
- Methods used for Evaluation
- Results in the form of tables/graphs etc.
- Discussion of results of evaluation
- Recommendations.

7. Common difficulties in Evaluation:

7.1 Demands and needs often exceed resources and so evaluation results are often discouraging.

7.2 Inadequate planning, especially for evaluation, before start of programme.

7.3 Lack of expertise. Evaluation requires expertise in such fields as social medicine, statistics, sociology, social psychology, economics, administration, computer science etc. Qualified people are thus scarce.

7.4 Techniques and terminologies in evaluation procedures are strange to programme/project staff and so they are often distrusting and uncooperative. Some terminologies have forbidding names but are basically simple eg. cost-benefit analysis, network analysis, simulation, management audit, resource allocation model etc.

7.5 Methodological difficulties. For example, many health programmes cannot be measured in quantifiable terms and their benefit to the people are often subjective, general rather than specific, and have subtle effects that cannot be measured.

7.6 Due to the pressure of day-to-day work of the programme, the "demands" to analyse, record, compile, measure activities etc. "seem" to be an additional burden.

HOWEVER IT MUST BE REMEMBERED THAT THE OBJECTIVE OF EVALUATION IS NOT TO CONDEMN OR PRAISE, BUT TO SIMPLY STATE FACTS SO THAT THE PROGRAMME MAY BE SUITABLY MODIFIED TO GIVE ITS BEST TO THE PEOPLE FOR WHOM IT SERVES.

Com H 49

SOURCE : DEVELOPMENT COMMUNICATION REPORT - 1991/1

MAKING A SPLASH: HOW EVALUATORS CAN BE BETTER COMMUNICATORS

by Michael Hendricks

If a tree falls in the forest and one hears it, did it make a sound ? If an evaluation report falls on someone's desk and no one reads it, did it make a splash? None whatsoever, yet we evaluators still rely too often on long, jargon-filled texts to "communicate" our analyses, findings, and recommendations. We can, and must do better.

Why? Because the only reason for doing evaluations is to make that splash, to have that impact, to change situations in a desired direction. Some call this "Speaking Truth to Power" but what good is speaking Truth if Power isn't listening ? Unless we help our audiences to listen, all our good works will go for naught.

We can do better in at least two ways. First, we can employ more interesting techniques to communicate our findings, thick reports simply won't work anymore, if they ever did. Second, we can remember a few guidings, principles to enhance all our messages. Let's first consider some better techniques:

FINAL REPORTS

If we must produce final written reports (and surprisingly often these reports are not required), then for everyone's sake, let's make them:

- shorter: no more than 15 to 20 pages per report, and always with an executive summary;
- more true-to-life: perhaps including direct quotes, personal incidents, short case studies, metaphors and analogies, and especially photographs whenever possible;
- more powerful: using active voice and present tense, featuring the most important information first, and using the sorts of graphics discussed below;and
- visually appealing : using modern graphics design principles, desktop publishing, and high-quality materials.

OTHER WRITTEN PRODUCTS

In addition to final reports, other written products can be even more useful. Draft reports, for example, can be especially effective, precisely because they are still subject to change. I sometimes deliberately include material in a draft report that I have no intention of including in a final report, usually to raise sensitive or even controversial issues that are not receiving enough attention.

Other written products include interim progress reports, talking papers, question-and-answer statements, memoranda, written responses to other speeches, press releases, "op ed" items in newspapers, speeches, written testimony, newsletters, and even articles in association or professional journals. In short, we evaluators have plenty of opportunities to present our findings, but we must be more creative at using these opportunities.

GRAPHICS

Using graphics is not a presentation technique by itself, but they are so useful they deserve special attention. Pie charts, historical timelines, maps, small multiples, and pictographs are an effective communication technique for several reasons. They allow a large quantity of data to be displayed and absorbed quickly, they reveal patterns not otherwise apparent they allow easier comparisions among data sets, and they can have a strong impact. Furthermore, we can use these graphics not only for presentations to audiences at the end but also to help guide our own analyses as we progress.

However, a book on "How to lie with Graphics" could easily include sections on clutter, incorrect proportions (especially by the gratuitous use of three-dimensional effects), an overemphasis on artistic effects, broken or shifting scales, and failuer to place findings in perspective or to adjust accordingly Any of these errors could easily confuse or even mislead our audiences, so graphics must be used carefully.

Two overall suggestions might be useful. First, remember that selecting the proper graphics is not the first step in moving from data to graphics. The first step is for you, the evaluator, to determine your message. What specific point do you want to make? A second suggestion is to maximize the amount of "graphic ink" which presents actual data and to minimize the amount which presents grids, titles and legends. Unfortunately, too may pgraphics are now cluttered with extraneous ink.

PERSONAL BRIEFINGS

Briefings are almost always more effective than written reports for presenting evaluation findings, and they should almost always be used. True, they can be risky, since a poor presenter, poor selection of material, scheduling delays, audience moods and external events can effect the presentation. (I once saw a single briefing interrupted three times by phone calls from the White House). But the strong advantages to briefings than offset these risks.

For example, briefings involve all relevant actors in a common activity, allow these actors a much-needed forum for discussion, and create a certain momemtum for action.

Most importantly however, briefings fit the way managers normally operate. Managers rarely sit and read documents for long strectches of time, so why should we ask them to change their management style for us ? Instead, we evaluators need to tailor

our communications to fit our addience's style, and personal briefings vit very nicely.

To plan an effective briefings, limit the audience to a select group, select only the most important information, prepare 6-10 large briefing charts (or overhead transparencies or slides if you prefer), select a team of one presenter, one assistant, and one high-level liasion with the audience, study the audience's interests and likely questions, and practice, practice practice-exactly as you plan to present the briefing and using a stop watch.

To conduct an effective briefing, distribute materials in advance, don't overlook the lighting and seating arrangements, immediately grab the audience's attention, avoid using a microphone or notes, provide individual copies of all briefing, this means that the formal presentation should finish within 20 minutes the remaining 40 minutes are for general discussion, the first and most important purpose of a briefing.

OTHER TECHNIQUES

All evaluators use written reports and personal briefings to present our findings. But how many of us use less traditional techniques that may be even better at feeding our findings into ongoing decision-making?

I once worked for the Inspector General(IG) of the US Department of Health and Human Services, helping to supervise national level evaluations. The IG, as part of his normal routine, regularly held one-on one private lunches with the Secretary and other top agency officials. Naturally, we wanted him to discuss our evaluations at these lunches, but it was unrealistic to expect him to carry along a progress report.

So we began providing the IG with one pocket-sized index card for each of the evaluations which might be relevant for his luncheon partner. Because these cards were convinient, the IG looked at them on the way to lunch, and he usually found ways to interject our information into the discussion. As a result, top agency officials routinely discussed the IG's evaluations, not just on special occasions.

Carefully selected comments at relevant meetings or "chance" halliway encounters can also be useful, and more modern methods include videotaped and computerized evaluation presentations. The US Food and Drug Administration, for example, uses computer graphics to present captivating on-screen slide shows. In addition to allowing professional wipes, fades, and other transitions, this program allows an evaluator to build text charts line by line, make the bars of a bar chart grow, and add the slices of the pie one by one. This technique also allows an audience to view the message over and over, and at his or her leisure.

With these different presentation techniques in mind, let's now consider six guiding principles for using these technique most effectively:

- Remember that the burden for effectively communicating our findings is on us, the evaluators,not on our audiences. It is our responsibility to convey our messages, and it is our failure when this does not occur.

- As Thoreau would say" Simplify, Simplyfy." Our typical audience is usually very busy and being pulled in many= different directions, so we need to pare ruthlessly to reach our few points. If these create interest, we can always follow-up with more details.

- Know the audience. Do the homework necessary to learn their backgrounds, interests, concerns, plans, petpeeves, etc. Even something as simple as selecting examples from the home region of a key audience member can help maintain interest in a report or briefing.

- Be action-oriented. Our audiences are rarely interested in background knowledge; they almost always want information that will help them right now. Often this requires us to offer the time effective recommendations for actions by taking the time to establish a receptive environment and then carefully develop, present, and follow-up on our advice.

- Use multiple communication techniques. Rather than limit ourselves to one technique or another we can produce several written products, give a personal briefing, develop a Screen Show presentation, produce a videotape,etc- all filled with powerful graphics and helpful recommendations.

- Be aggressive. Instead of waiting for the audiences to request information, we must actively look for chances to present our information. This implies that we will communicate regularly and frequently, appear in person if at all possible, and target multiple reports and briefings to specific audiences and or issues.

In conclusion, we evaluators can be enormously useful in many different ways, but only if our findings have an impact. How we communicate our findings is often the difference between creating a tiny peoripple or making a proper splash.

SCORE SHEET FOR THE STUDY OF VALUES

DIRECTIONS :

1. First make sure that every question has been answered.

   Note: If you have found it impossible to answer all the questions, you may give equal scores to the alternative answers under each question that has been omitted; thus,

   Part I. 1½ for each alternative. The sum of the scores for (a) and (b) must always equal 3.

   Part II. 2½ for each alternative. The sum of the scores for the four alternatives under each question must always equal 10.

2. Add the vertical columns of scores on each page and enter the total in the boxes at the bottom of the page.

3. Transcribe the totals from each of the foregoing pages to the columns below. For each page enter the total for each column (R, S,T, etc) in the space that is labeled with the same letter. Note that the order in which the letters are inserted in the columns below differs for the various pages.

Page Totals	Theoretical	Economic	Aesthetic	Social	Political	Religious	The sum of the scores for each row must equal the figure given below.
PART I							
Page 2	(R)	(S)	(T)	(X)	(Y)	(Z)	24
Page 3	(Z)	(Y)	(X)	(T)	(S)	(R)	24
Page 4	(X)	(R)	(Z)	(S)	(T)	(Y)	24
Page 5	(S)	(X)	(Y)	(R)	(Z)	(T)	24
Part II							
Page 7	(Y)	(T)	(S)	(Z)	(R)	(X)	60
Page 8	(T)	(Z)	(R)	(Y)	(X)	(S)	60
Page 9	(R)	(S)	(T)	(X)	(Y)	(Z)	48
Total							240
Correction Figures	+2	-1	-4	-2	+2	-5	
FINAL TOTAL							240

4. Add the totals for the six columns. Add or substract the correction figures as indicated.

5. Check your mark by making sure that the total score for all six columns equals 240. (Use the margins for your additions, if you wish).

DEV

A

1. Extent of inequality in the world today:

a. In 1850, 3/4 of the world's population possessed 5/8 of the world's wealth.

In 1975, 2/3 of the world's population possessed 1/8 of the world's wealth

b. Whence came this uneven distribution of the world's resources?

"The tilting of the balance in favour of the West has come about in the last 130 years.....through the gun, through colonial plunder, slave trade, slave labour, child labour, racial discrimination, the creation of a dispossessed proletariate, and the destruction of the soul and life-style of many peoples."

(S.Rayan)

c. The growing gap between the rich nations and the poor had already been pointed out by Barbara Ward in the 1950's but the gap continues to widen:

"Today 85% and tomorrow 90% rot in misery to make possible the economic comfort of 15% today and 10% tomorrow"

(Heder Camara)

d. The result of this inequality is the ABSOLUTE POVERTY of millions in the "fourth" world:

- 1/3 to 1/2 of the two billion human beings in Asia, Africa and Latin America suffer from hunger and malnutrition.

- 1/5 to 1/4 of their children die before their fifth birthday, and millions of those who do survive lead impeded lives, due to brain damage, stunted physical growth and sapped vitality due to undernourishment.

- The life expectancy of the average person is twenty years less than his counterpart in the affluent world; that is, he is denied 30% of the life-span of one born in the developed nations: he is condemned at birth to an early death.

- 800 million of these people are illiterate and, despite continued expansion of educational opportunities, even more of their children are likely to be so.

e. Julius Nyerere, President of Tanzania, has warned the rich nations: "Poverty is not the real problem of the modern world, for we have the knowledge and the resources which will enable us to overcome poverty. The real problem of the modern world, the thing which creates misery, wars and hatred among men, is the division of mankind into rich and poor".

f. It is not so much the question of some having more to eat or better clothes to wear, while others cannot provide even the basic requirements; it is rather the power that this wealth gives to some to dominate, to oppress and to exploit the others. In so doing, the rich and powerful justify themselves: "We deserve this wealth and power: we have put our God-given talents to use and have worked hard. If the rest of the world is lazy, shiftless and ignorant, we can't help that."

2. Extent of inequality in India today:

a. While we often and with some justification, blame all our problems on the greediness of the affluent, developed nations, the same ever-widening gap between the "haves" and the "have-nots" appears here even

b. Within our population of upwards 600 millions of people, roughly 250 million live below the "poverty line", that dividing line that demarcates bare minimum of survival for an individual. This is the bottom 40 per cent. Another 250 million live just above the"poverty line" of human survival. the remaining 15-20 per cent, in an ascending pyramid represent the wealthy, dominant classes with power, position and quality education: the raw material for further exploitation of the others.

c. In rural India, the top ten per cent own 50% of the land, while the bottom 50 per cent own 4%; top ten per cent get 1/3 of annual income of the nation,while the bottom 50% get less than this amount for all of their numbers. 0.1% of the population owns more than half the wealth of the area.

d. The poor are organised, without political power, and are taken advantage of. A slum dweller admits: "Even to get a sweeper's job, we have to pay a bribe of Rs.200/-"

e. The very poor (bottom 40 percent) have less than Rs.40/- per month to spend. Most cannot read or write.

A

1. Extent of inequality in the world today:

a. In 1850, 3/4 of the world's population possessed 5/8 of the world's wealth.

In 1975, 2/3 of the world's population possessed 1/8 of the world's wealth

b. Whence came this uneven distribution of the world's resources?

"The tilting of the balance in favour of the West has come about in the last 130 years.....through the gun, through colonial plunder, slave trade, slave labour, child labour, racial discrimination, the creation of a dispossessed proletariate, and the destruction of the soul and life-style of many peoples."

(S.Rayan)

c. The growing gap between the rich nations and the poor had already been pointed out by Barbara Ward in the 1950's but the gap continues to widen:

"Today 85% and tomorrow 90% rot in misery to make possible the economic comfort of 15% today and 10% tomorrow"

(Heder Camara)

d. The result of this inequality is the ABSOLUTE POVERTY of millions in the "fourth" world:

- 1/3 to 1/2 of the two billion human beings in Asia, Africa and Latin America suffer from hunger and malnutrition.

- 1/5 to 1/4 of their children die before their fifth birthday, and millions of those who do survive lead impeded lives, due to brain damage, stunted physical growth and sapped vitality due to undernourishment.

- The life expectancy of the average person is twenty years less than his counterpart in the affluent world; that is, he is denied 30% of the life-span of one born in the developed nations: he is condemned at birth to an early death.

- 800 million of these people are illiterate and, despite continued expansion of educational opportunities, even more of their children are likely to be so.

e. Julius Nyerere, President of Tanzania, has warned the rich nations: "Poverty is not the real problem of the modern world, for we have the knowledge and the resources which will enable us to overcome poverty. The real problem of the modern world, the thing which creates misery, wars and hatred among men, is the division of mankind into rich and poor".

f. It is not so much the question of some having more to eat or better clothes to wear, while others cannot provide even the basic requirements; it is rather the power that this wealth gives to some to dominate, to oppress and to exploit the others. In so doing, the rich and powerful justify themselves: "We deserve this wealth and power: we have put our God-given talents to use and have worked hard. If the rest of the world is lazy, shiftless and ignorant, we can't help that."

2. Extent of inequality in India today:

a. While we often and with some justification, blame all our problems on the greediness of the affluent, developed nations, the same ever-widening gap between the "haves" and the "have-nots" appears here even

b. Within our population of upwards 600 millions of people, roughly 250 million live below the "poverty line", that dividing line that demarcates bare minimum of survival for an individual. This is the bottom 40 per cent. Another 250 million live just above the"poverty line" of human survival. the remaining 15-20 per cent, in an ascending pyramid represent the wealthy, dominant classes with power, position and quality education: the raw material for further exploitation of the others.

c. In rural India, the top ten per cent own 50% of the land, while the bottom 50 per cent own 4%; top ten per cent get 1/3 of annual income of the nation, while the bottom 50% get less than this amount for all of their numbers. 0.1% of the population owns more than half the wealth of the area.

d. The poor are organised, without political power, and are taken advantage of. A slum dweller admits: "Even to get a sweeper's job, we have to pay a bribe of Rs.200/-"

e. The very poor (bottom 40 percent) have less than Rs.40/- per month to spend. Most cannot read or write.

D

1. Do our findings differ according to the section of town we come from? Why might this be so?

2. How does this "minimum monthly income" compare with the incomes of the families we met during our house survey last time?

3. Do the families we met then exceed the number of members of the "model" family of four we have used on this survey? What would this mean with regard to their minimum monthly needs?

4. What may be the consequences when minimum monthly requirements and income do not meet? Cutting corners? family insecurity? undernourished and underclothed children? etc.

5. What are some of the possible consequences of family insecurity? quarrels? drunkenness? indebtedness that becomes chronic? etc.

6. Who is to blame for so many people in our community living under or just on "the poverty line"?

7. Where does your family shop? What type of rice does your family buy? What type of cloth? How much rent? How much entertainment goes into your miscellaneous expenses?

8. Was this a new experience for you, or have you often done the shopping in the past?

9. How did you go about choosing the market and the different shops?

10. What did you learn from this experience?

D

1. Do our findings differ according to the section of town we come from? Why might this be so?

2. How does this "minimum monthly income" compare with the incomes of the families we met during our house survey last time?

3. Do the families we met then exceed the number of members of the "model" family of four we have used on this survey? What would this mean with regard to their minimum monthly needs?

4. What may be the consequences when minimum monthly requirements and income do not meet? Cutting corners? family insecurity? undernourished and underclothed children? etc.

5. What are some of the possible consequences of family insecurity? quarrels? drunkenness? indebtedness that becomes chronic? etc.

6. Who is to blame for so many people in our community living under or just on "the poverty line"?

7. Where does your family shop? What type of rice does your family buy? What type of cloth? How much rent? How much entertainment goes into your miscellaneous expenses?

8. Was this a new experience for you, or have you often done the shopping in the past?

9. How did you go about choosing the market and the different shops?

10. What did you learn from this experience?

FOR RESTRICTED USE ONLY

ALLPORT : VERNON : LINDZEY

STUDY OF VALUES

Part I

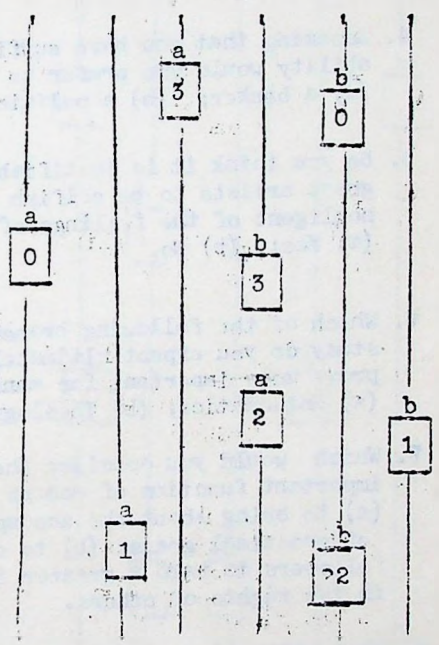
DIRECTIONS : A number of controversial statements or questions with two alternative answers are given below. Indicate your personal preferences by writing appropriate figures in the boxes to the right of each question. Some of the alternatives may appear equally attractive or unattractive to you. Nevertheless, please attempt to choose the alternative that is relatively more acceptable to you. For each question you have three points that you may distribute in any of the following combinations.

1. If you agree with alternative (a) and disagree with (b), write 3 in the first box and 0 is the second box, thus

2. If you agree with (b); disagree with (a) , write

3. If you have a slight preference for (a) over (b), write

4. If you have a slight preference for (b) over (a), write



Do not write any combination of numbers except one of these four. There is no time limit, but do not linger over any one question or statement, and do not leave out any of the questions unless you find it really impossible to make a decision.

BEHAVIOURAL SCIENCE CENTRE, ST. XAVIER'S COLLEGE, AHMEDABAD 380 009

1. The main object of scientific research should be the discovery of truth rather than its practical applications.
(a) Yes; (b) No.

2. Taking the Bible/Ramayana/Koran as a whole, one should regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation.
(a) Yes; (b) No.

3. Which of the following men do you think should be judged as contributing more to the progress of mankind ?
(a) Aristotle; (b) Abraham Lincoln.

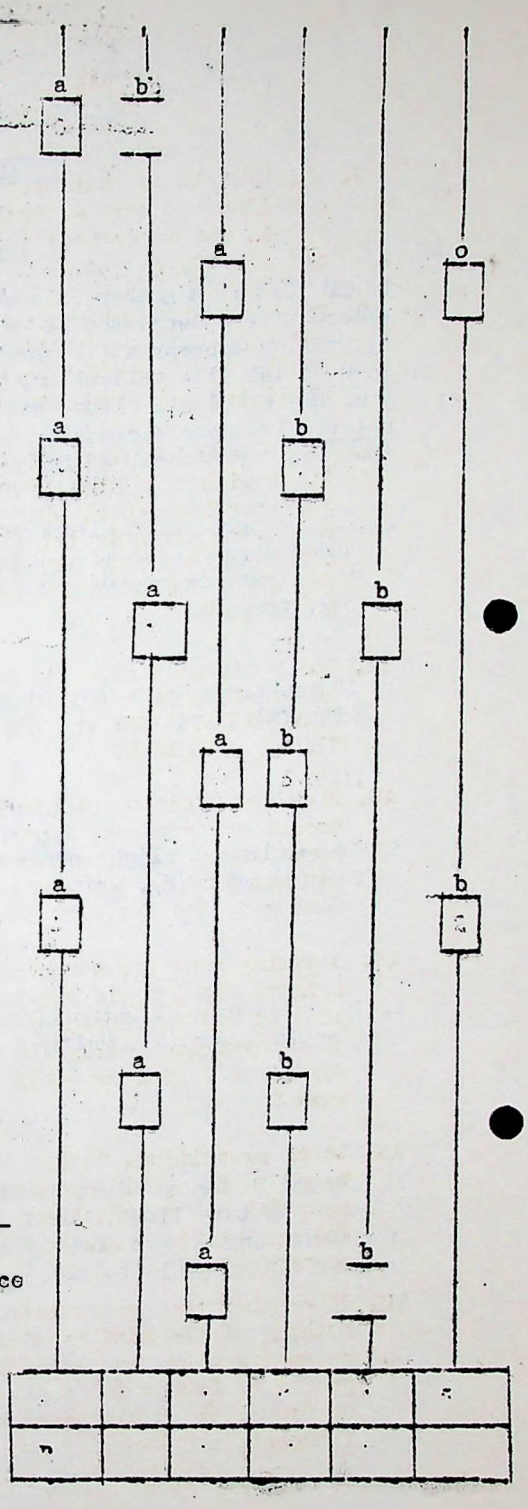
4. Assuming that you have sufficient ability would you prefer to be;
(a) a banker; (b) a politician?

5. Do you think it is justifiable for great artists to be selfish and negligent of the feelings of others?
(a) Yes; (b) No.

6. Which of the following branchesof study do you expect ultimately will prove more important for mankind ?
(a) Mathematics; (b) Theology

7. Which would you consider the more important function of modern leaders?
(a) to bring about the accomplishment of practical goals; (b) to encourage followers to take a greater interest in the rights of others.

8. When witnessing a gorgeous ceremony (ecclesiastical or academic, induction into office, etc.), are you more impressed; (a) by the colour and pageantry of the occasion itself; (b) by the influence and strength of the group?



9. Which of these character traits do you consider the more desirable? (a) high ideals and reverence: (b) unselfishness and sympathy.

10. If you were a university professor and had the necessary ability, would you prefer to teach: (a) Poetry; (b) chemistry and physics?

11. If you should see the following news items with headlines of equal size in your morning paper, which would you read more attentively? (a) RELIGIOUS DIFFERENCES WITHIN ANY COMMUNITY: (b) GREAT IMPROVEMENTS IN MARKET CONDITIONS.

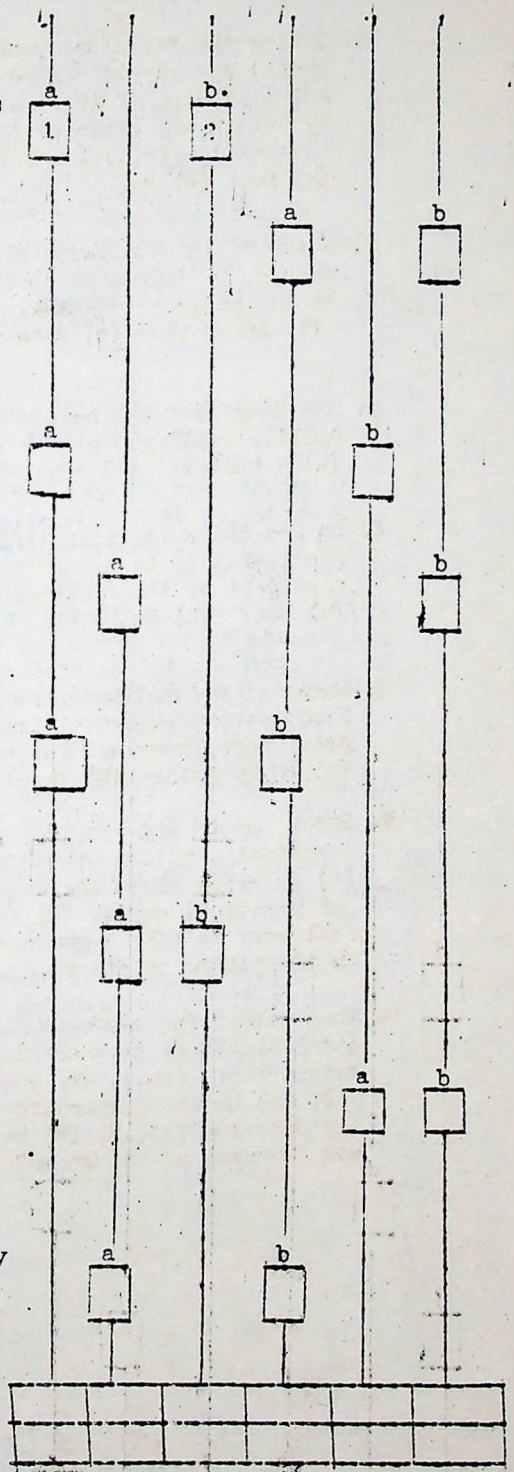
12. Under circumstances similar to those of Question 11 ? (a) SUPREME COURT RENDERS DECISION: (b) NEW SCIENTIFIC THEORY ANNOUNCED.

13. When you visit a cathedral/temple/ mosque are you more impressed by a pervading sense of reverence and worship than by the architectural features. (a) Yes; (b) No.

14. Assuming that you have sufficient leisure time, would you prefer to use it: (a) developing your mastery of a favourite skill; (b) doing volunteer social or public service work ?

15. At an exposition, do you chiefly like to go to the buildings where you can see: (a) new manufactured products; (b) scientific (e.g. chemical) apparatus?

16. If you had the opportunity, and if nothing of the kind existed in the community where you live, would you prefer to found: (a) a debating society or forum; (b) a classical music club (Sangeet Sammelan)



17. The aim of the religious organizations at the present time should be: (a) to bring our altruistic and charitable tendencies; (c) to encourage spiritual worship and a sense of communionwith the highest

18. If you had some time to spend in a waiting room and there were only two magazines to choose from, would you prefer: (a) SCIENTIFIC AGE; (b) ARTS AND DECORATIONS?

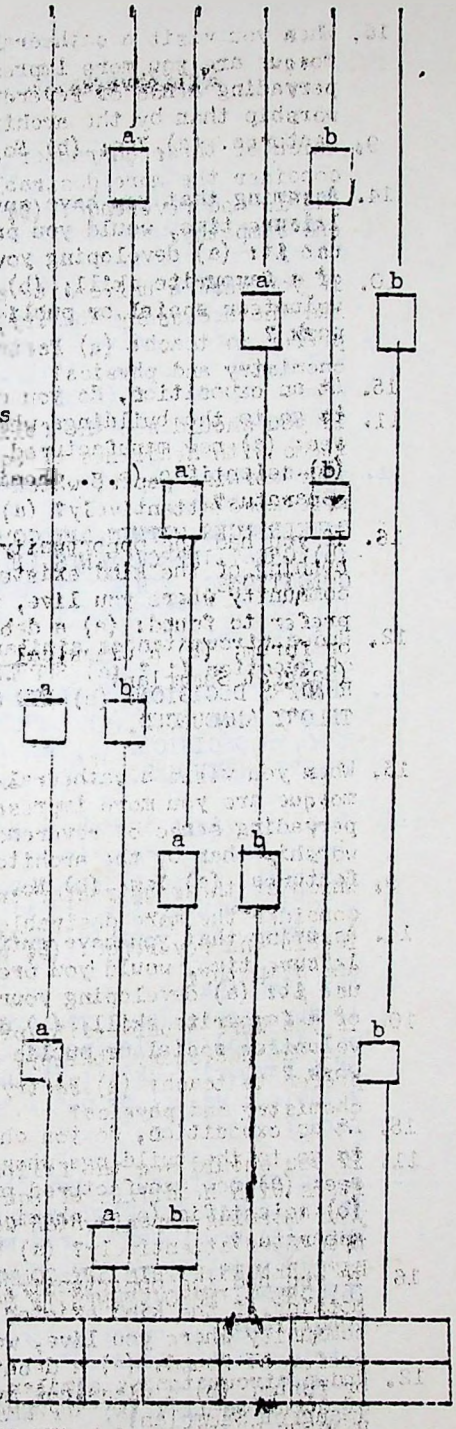
19. Would you prefer to hear a series of lectures on: (a) the comparative merits of the forms of government in Britain and in the United States; (b) the comparative development of the great religious faiths?

20. Which of the following would you consider the more important function of education? (a) its preparation for practical achievement and financial reward; (b) its preparation for participation in community activities and aiding less fortunate persons.

21. Are you more interested in reading accounts of the lives and works of men such as: (a) Alexander, Julius Caesar, and Ashoka; (c) Aristotle, Socrates, and Radhakrishnan

22. Are our modern industrial and scientific developments signs of a greater degree of civilization than those attained by any previous society, the Greeks, for example? (a) Yes; (b) No.

23. If you were engaged in an industrial organization (and assuming salaries to be equal), would you prefer to work; (a) as a counsellor for employees; (b) in an administrative position?



TOTAL

24. Given your choice between two books to read, are you more likely to select:
(a) THE STORY OF RELIGION IN INDIA:
(b) THE STORY OF INDUSTRY IN INDIA:

25. Would modern society benefit more from: (a) more concern for the rights and welfare of citizens; (b) greater knowledge of the fundamental laws of human behaviour.

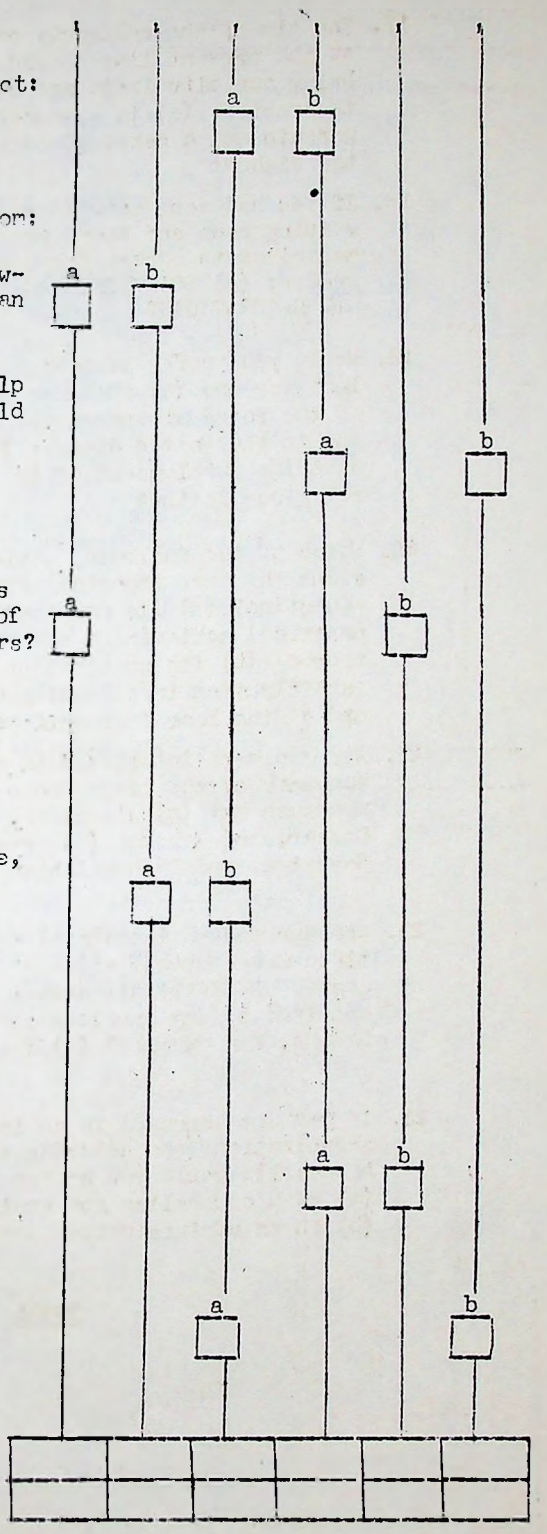
26. Suppose you were in a position to help raise standards of living, or to mould public opinion. Would you prefer to influence: (a) standards of living; (b) public opinion?

27. Would you prefer to hear a series of popular lectures on: (a) the progress of social service work in your part of the country; (b) contemporary painters?

28. All the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with natural principles, so that there is no necessity to assume a first course, cosmic purpose, or God behind it.
(a) I agree with this statement;
(b) I disagree

29. In a paper, such as the New York Sunday Times, are you more likely to read: (a) the real estate sections and the account of the stock market; (b) the section on picture galleries and exhibitions?

30. Would you consider it more important for your child to secure training in (a) religion; (b) athletics?



TOTAL

Part II

DIRECTIONS: Each of the following situations or questions is followed by four possible attitudes or answers. Arrange these answers in the order of your personal preference by writing, in the appropriate box at the right, a score of 4, 3, 2, or 1. To the statement you prefer most give 4, to the statement that is second most attractive 3, and so on.

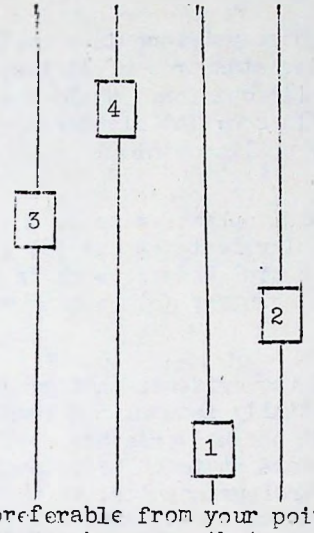
Example: If this were a question and the following statements were alternative choices you would place:

4 in the box if this statement appeals to you.

3 in the box if this statement appeals to you second best.

2 in the box if this statement appeals to you third best

1 in the box if this statement represents your interest or preference least of all.



You may think of answers which would be preferable from your point of view to any of those listed. It is necessary, however, that you make your selection from the alternatives presented, and arrange all four in order of their desirability, guessing when your preferences are not distinct. If you find it really impossible to state your preference, you may omit the question. Be sure not to assign more than one 4, one 3, etc., for each question.

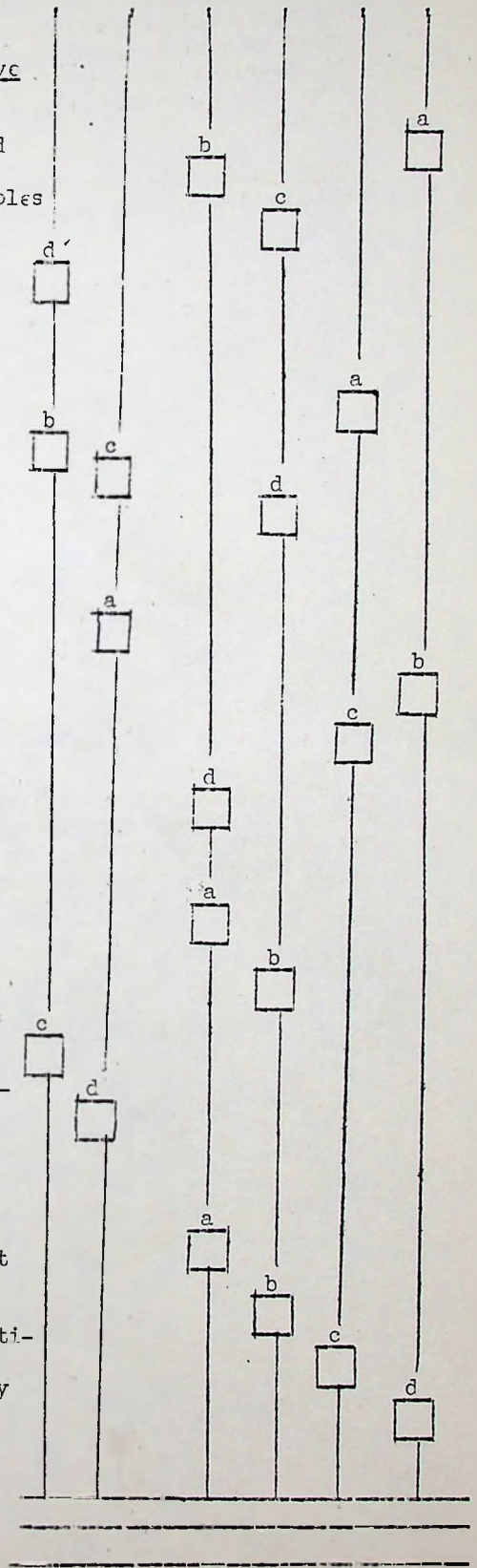
1. Do you think that a good government should aim chiefly at--(Remember to give your first choice 4, etc.)
   a. more aid for the poor, sick and old
   b. the development of manufacturing and trade
   c. introducing highest ethical principles into its policies and diplomacy
   d. establishing a position of prestige and respect among nations.

2. In your opinion, can a man who works in business all the week best spend Sunday in
   a. trying to educate himself by reading serious books
   b. Trying to win at golf, or racing
   c. going to anorchestral concert
   d. hearing a really good sermon

3. If you could influence the educational policies of the public schools of some city, would you undertake--
   a. to promote the study and participation in music and fine arts.
   b. to stimulate the study of social problems
   c. to provide additional laboratory facilities
   d. to increase the practical value of courses

4. Do you prefer a friend (of your own sex) who--
   a. is efficient, industrious and of a practical turn of mind.
   b. is seriously interested in thinking out his attitude toward life as a whole
   c. possess qualities of leadership and organizing ability.
   d. shows artistic and emotional sensitivity

5. If you lived in a small town and had more than enough income for your needs, would you prefer to--
   a. apply it productively to assist commercial and industrial development
   b. help to advance the activities of local religious groups
   c. give it for the development of scientific research in your locality
   d. give it to the Family Welfare Society



TOTAL

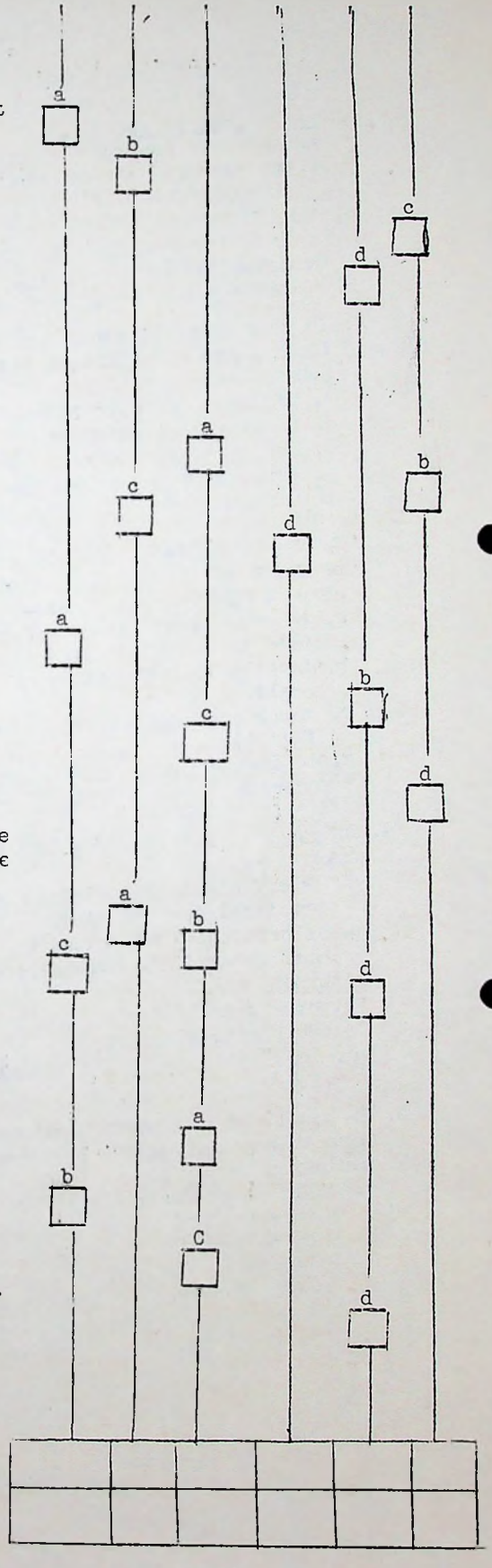
6. When you go to the theater, do you, as a rule, enjoy most--
   a. plays that treat the lives of great men
   b. ballet or similar imaginative performances
   c. plays that have a theme of human suffering and love
   d. problem plays that argue consistently for some point of view

7. Assuming that you are a man with the necessary ability, and that the salary for each of the following occupations is the same, would you prefer to be a --
   a. mathematician
   b. sales manager
   c. religious preacher
   d. politician

8. If you had sufficient leisure and money, would you prefer to--
   a. make a collection of fine sculptures or paintings
   b. establish a center for the care and training of the feeble-minded
   c. aim at a membership of Parliament or a seat in the Cabinet
   d. establish a business or financial enterprise of your own

9. At an evening discussion with intimate friends of your own sex, are you more interested when you talk about--
   a. themeaning of life
   b. developments in science
   c. literature
   d. socialism and social amelioration

10. Which of the following would you prefer to do during part of your next summer vacation (if your ability and other conditions would permit)-
   a. write and publish an original biological essay or article
   b. stay in some secluded part of the country where you can appreciate fine scenery
   c. enter a local tennis or other athletic tournament
   d. get experience in some new line of business



TOTAL

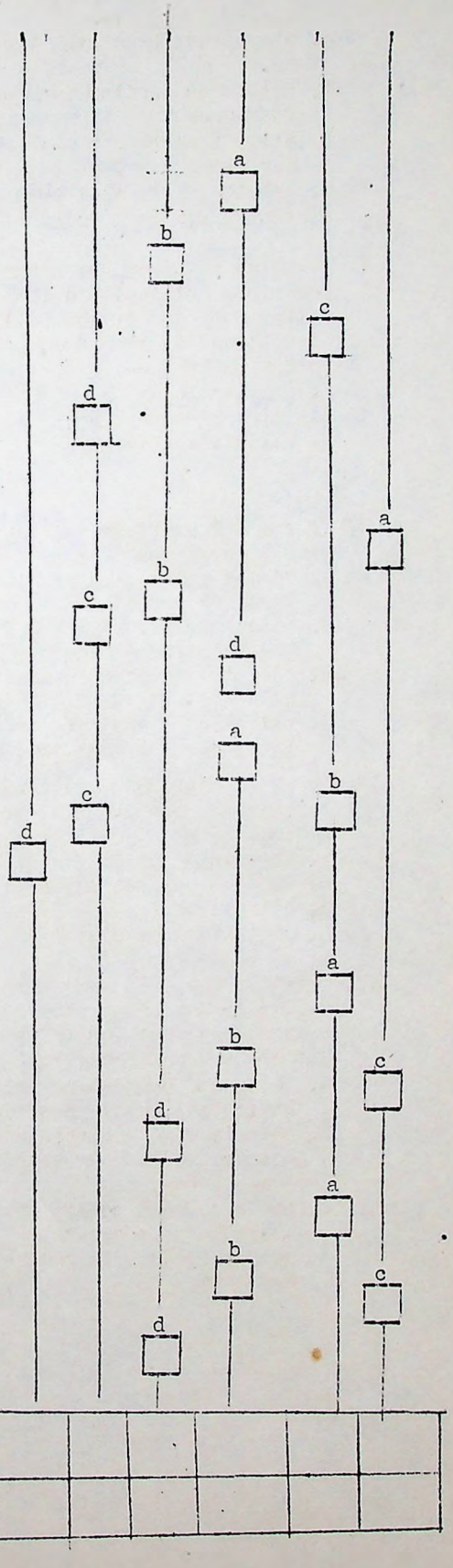
11. Do great exploits and adventures of discovery such as Columbus's, Magellan's, Byrd's and Amundsen's seem to you significant because--
    a. they represent conquests by man over the difficult forces of nature
    b. they add to our knowledge of geography, meteorology, oceanography, etc.
    c. they wield human interests and international feelings throughout the world
    d. they contribute each in a small way to an ultimate understanding of the universe

12. should one guide one's conduct according to, or develop one's chief loyalties toward--
    a. one's religious faith
    b. ideals of beauty
    c. one's occupational organization and associates
    d. ideals of charity

13. To what extent do the following famous persons interest you --
    a. Florence Nightingale
    b. Napoleon
    c. Henry Ford
    d. Galileo

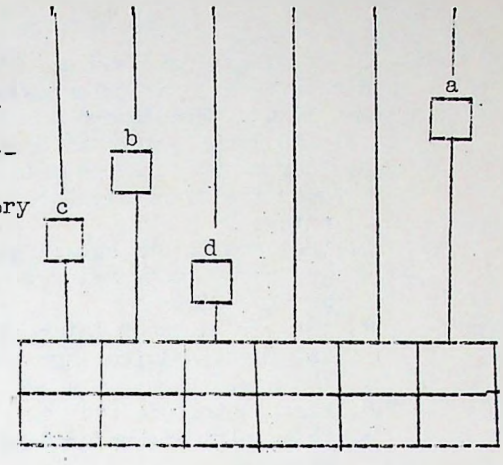
14. In choosing a wife would you prefer a woman who-- (Men answer the alternative form below)
    a. can achieve social prestige, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in her attitudes toward life
    d. is gifted along artistic lines

    (For women) Would you prefer a husband who
    a. is successful in his profession, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in his attitudes toward life
    d. is gifted along artistic lines



TOTAL

15. Viewing Ajanta Paintings, would you tend to think of those --
    a. as expressing the highest spiritual aspirations and emotions
    b. as the most priceless and irreplaceable ever painted
    c. in relation to their place in history
    d. the quintessence of harmony and design



TOTAL

FOR RESTRICTED USE ONLY

ALLPORT : VERNON : LINDZEY

STUDY OF VALUES

Part I

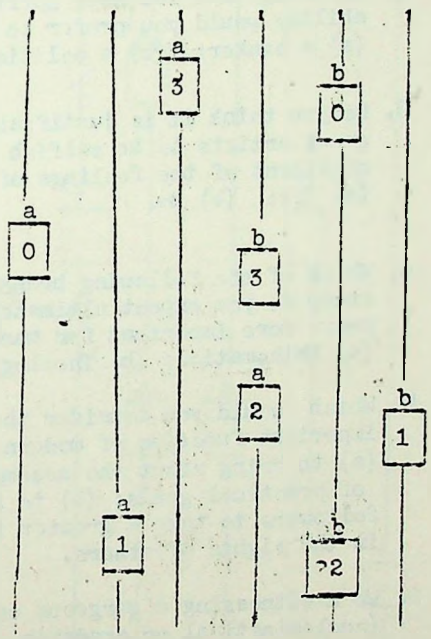
DIRECTIONS : A number of controversial statements or questions with two alternative answers are given below. Indicate your personal preferences by writing appropriate figures in the boxes to the right of each question. Some of the alternatives may appear equally attractive or unattractive to you. Nevertheless, please attempt to choose the alternative that is relatively more acceptable to you. For each question you have three points that you may distribute in any of the following combinations.

1. If you agree with alternative (a) and disagree with (b), write 3 in the first box and 0 is the second box, thus

2. If you agree with (b); disagree with (a) , write

3. If you have a slight preference for (a) over (b), write

4. If you have a slight preference for (b) over (a), write



Do not write any combination of numbers except one of these four. There is no time limit, but do not linger over any one question or statement, and do not leave out any of the questions unless you find it really impossible to make a decision.

1. The main object of scientific research should be the discovery of truth rather than its practical applications.
(a) Yes; (b) No.

2. Taking the Bible/Ramayana/Koran as a whole, one should regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation.
(a) Yes; (b) No.

3. Which of the following men do you think should be judged as contributing more to the progress of mankind ?
(a) Aristotle; (b) Abraham Lincoln.

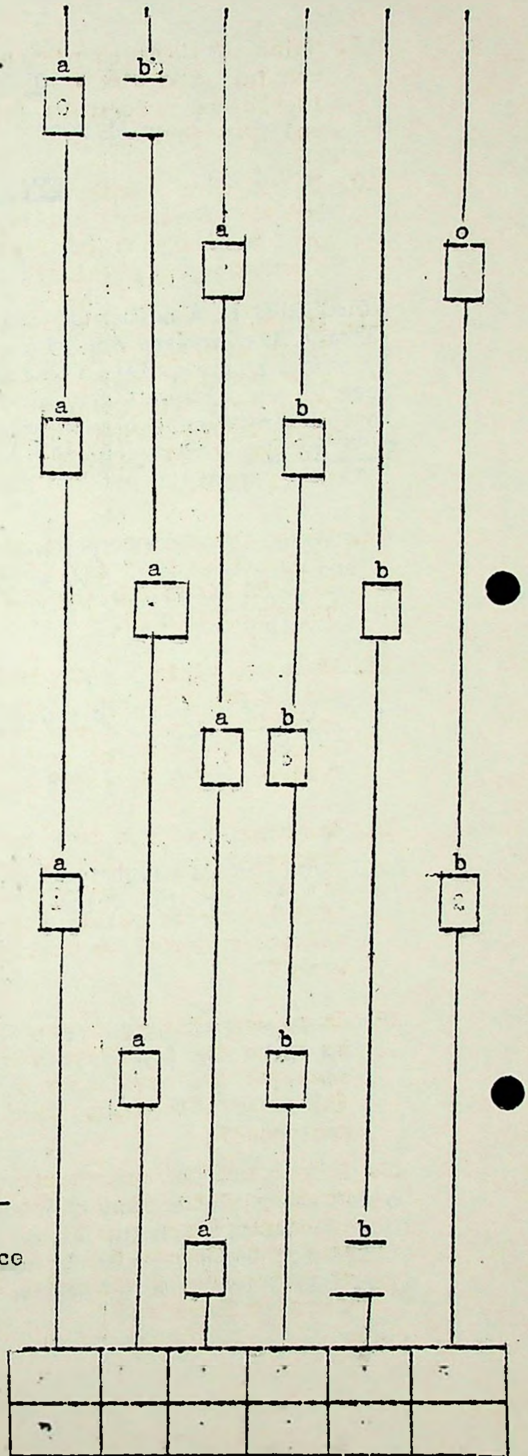
4. Assuming that you have sufficient ability would you prefer to be:
(a) a banker; (b) a politician?

5. Do you think it is justifiable for great artists to be selfish and negligent of the feelings of others?
(a) Yes; (b) No.

6. Which of the following branchesof study do you expect ultimately will prove more important for mankind ?
(a) Mathematics; (b) Theology

7. Which would you consider the more important function of modern leaders?
(a) to bring about the accomplishment of practical goals; (b) to encourage followers to take a greater interest in the rights of others.

8. When witnessing a gorgeous ceremony (ecclesiastical or academic, induction into office, etc.), are you more impressed; (a) by the colour and pageantry of the occasion itself; (b) by the influence and strength of the group?



<u>TOTAL</u>

9. Which of these character traits do you consider the more desirable? (a) high ideals and reverence: (b) unselfishness and sympathy.

10. If you were a university professor and had the necessary ability, would you prefer to teach: (a) Poetry; (b) chemistry and physics?

11. If you should see the following news items with headlines of equal size in your morning paper, which would you read more attentively? (a) RELIGIOUS DIFFERENCES WITHIN ANY COMMUNITY: (b) GREAT IMPROVEMENTS IN MARKET CONDITIONS.

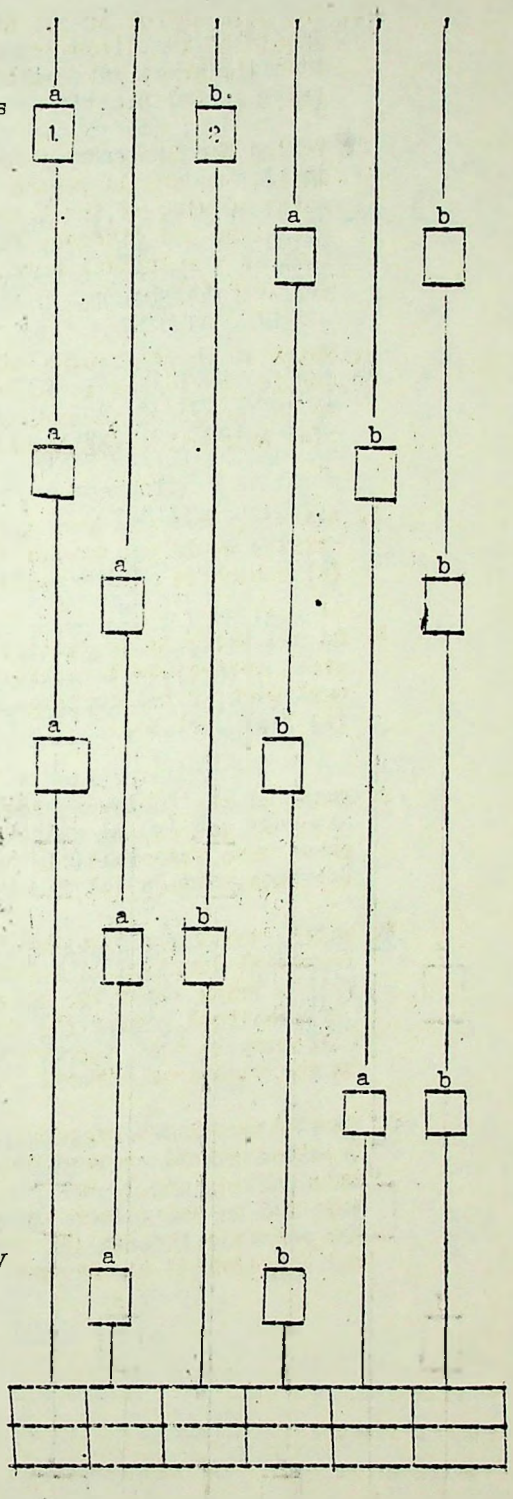
12. Under circumstances similar to those of Question 11 ? (a) SUPREME COURT RENDERS DECISION: (b) NEW SCIENTIFIC THEORY ANNOUNCED.

13. When you visit a cathedral/temple/ mosque are you more impressed by a pervading sense of reverence and worship than by the architectural features. (a) Yes; (b) No.

14. Assuming that you have sufficient leisure time, would you prefer to use it: (a) developing your mastery of a favourite skill; (b) doing volunteer social or public service work ?

15. At an exposition, do you chiefly like to go to the buildings where you can see: (a) new manufactured products; (b) scientific (e.g. chemical) apparatus?

16. If you had the opportunity, and if nothing of the kind existed in the community where you live, would you prefer to found: (a) a debating society or forum; (b) a classical music club (Sangeet Sammelan)



17. The aim of the religious organizations at the present time should be: (a) to bring our altruistic and charitable tendencies; (c) to encourage spiritual worship and a sense of communionwith the highest

18. If you had some time to spend in a waiting room and there were only two magazines to choose from, would you prefer: (a) SCIENTIFIC AGE; (b) ARTS AND DECORATIONS?

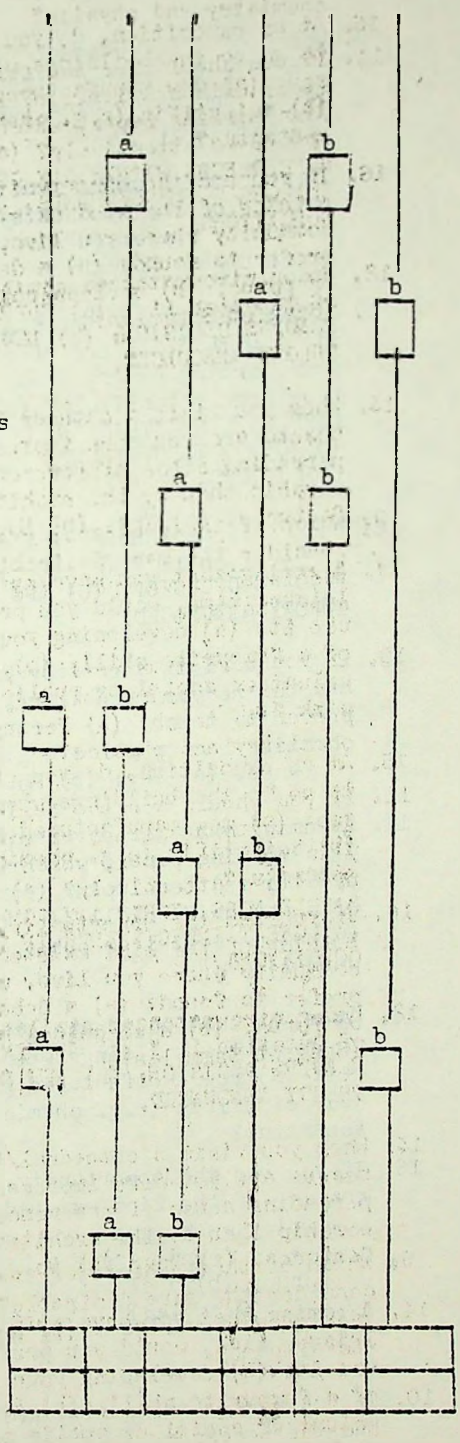
19. Would you prefer to hear a series of lectures on: (a) the comparative merits of the forms of government in Britain and in the United States; (b) the comparative development of the great religious faiths?

20. Which of the following would you consider the more important function of education? (a) its preparation for practical achievement and financial reward; (b) its preparation for participation in community activities and aiding less fortunate persons.

21. Are you more interested in reading accounts of the lives and works of men such as: (a) Alexander, Julius Caesar, and Ashoka; (c) Aristotle, Socrates, and Radhakrishnan

22. Are our modern industrial and scientific developments signs of a greater degree of civilization than those attained by any previous society, the Greeks, for example? (a) Yes; (b) No.

23. If you were engaged in an industrial organization (and assuming salaries to be equal), would you prefer to work; (a) as a counsellor for employees; (b) in an administrative position?



TOTAL

24. Given your choice between two books to read, are you more likely to select:
(a) THE STORY OF RELIGION IN INDIA:
(b) THE STORY OF INDUSTRY IN INDIA:

25. Would modern society benefit more from: (a) more concern for the rights and welfare of citizens; (b) greater knowledge of the fundamental laws of human behaviour.

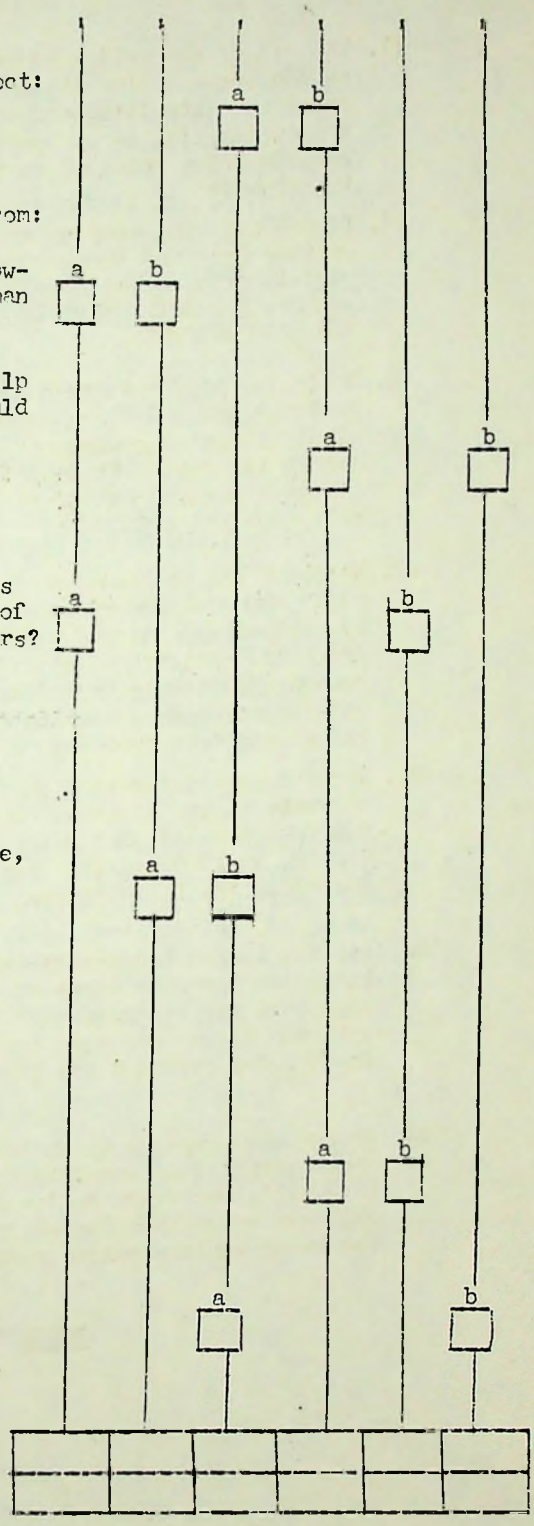
26. Suppose you were in a position to help raise standards of living, or to mould public opinion. Would you prefer to influence: (a) standards of living; (b) public opinion?

27. Would you prefer to hear a series of popular lectures on: (a) the progress of social service work in your part of the country; (b) contemporary painters?

28. All the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with natural principles, so that there is no necessity to assume a first course, cosmic purpose, or God behind it.
(a) I agree with this statement;
(b) I disagree

29. In a paper, such as the New York Sunday Times, are you more likely to read: (a) the real estate sections and the account of the stock market; (b) the section on picture galleries and exhibitions?

30. Would you consider it more important for your child to secure training in (a) religion; (b) athletics?



TOTAL

Part II

DIRECTIONS: Each of the following situations or questions is followed by four possible attitudes or answers. Arrange these answers in the order of your personal preference by writing, in the appropriate box at the right, a score of 4, 3, 2, or 1. To the statement you prefer most give 4, to the statement that is second most attractive 3, and so on.

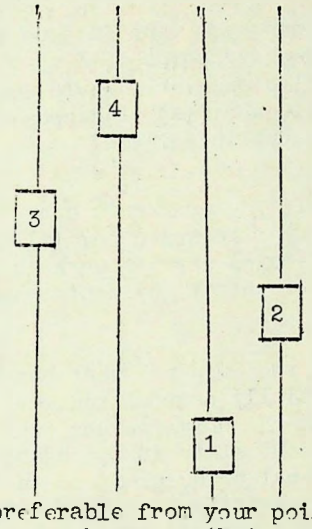
Example: If this were a question and the following statements were alternative choices you would place:

4 in the box if this statement appeals to you.

3 in the box if this statement appeals to you second best.

2 in the box if this statement appeals to you third best

1 in the box if this statement represents your interest or preference least of all.



You may think of answers which would be preferable from your point of view to any of those listed. It is necessary, however, that you make your selection from the alternatives presented, and arrange all four in order of their desirability, guessing when your preferences are not distinct. If you find it really impossible to state your preference, you may omit the question. Be sure not to assign more than one 4, one 3, etc., for each question.

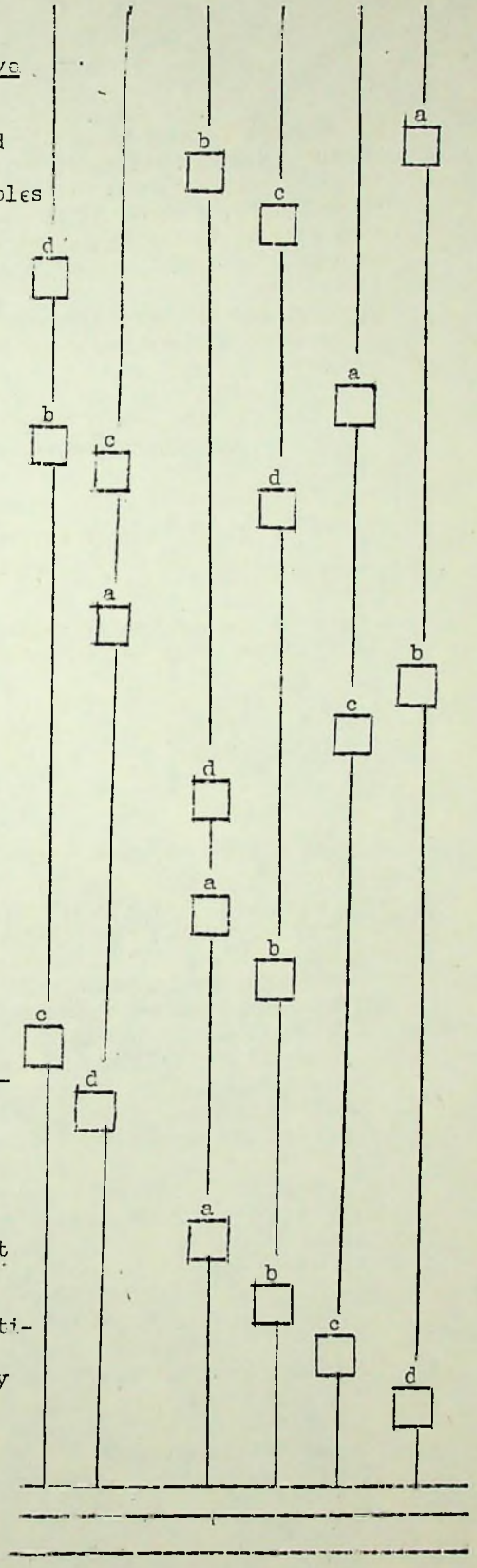
1. Do you think that a good government should aim chiefly at--(Remember to give your first choice 4, etc.)
   a. more aid for the poor, sick and old
   b. the development of manufacturing and trade
   c. introducing highest ethical principles into its policies and diplomacy
   d. establishing a position of prestige and respect among nations.

2. In your opinion, can a man who works in business all the week best spend Sunday in
   a. trying to educate himself by reading serious books
   b. Trying to win at golf, or racing
   c. going to anorchestral concert
   d. hearing a really good sermon

3. If you could influence the educational policies of the public schools of some city, would you undertake--
   a. to promote the study and participation in music and fine arts.
   b. to stimulate the study of social problems
   c. to provide additional laboratory facilities
   d. to increase the practical value of courses

4. Do you prefer a friend (of your own sex) who--
   a. is efficient, industrious and of a practical turn of mind.
   b. is seriously interested in thinking out his attitude toward life as a whole
   c. possess qualities of leadership and organizing ability.
   d. shows artistic and emotional sensitivity

5. If you lived in a small town and had more than enough income for your needs, would you prefer to--
   a. apply it productively to assist commercial and industrial development
   b. help to advance the activities of local religious groups
   c. give it for the development of scientific research in your locality
   d. give it to the Family Welfare Society



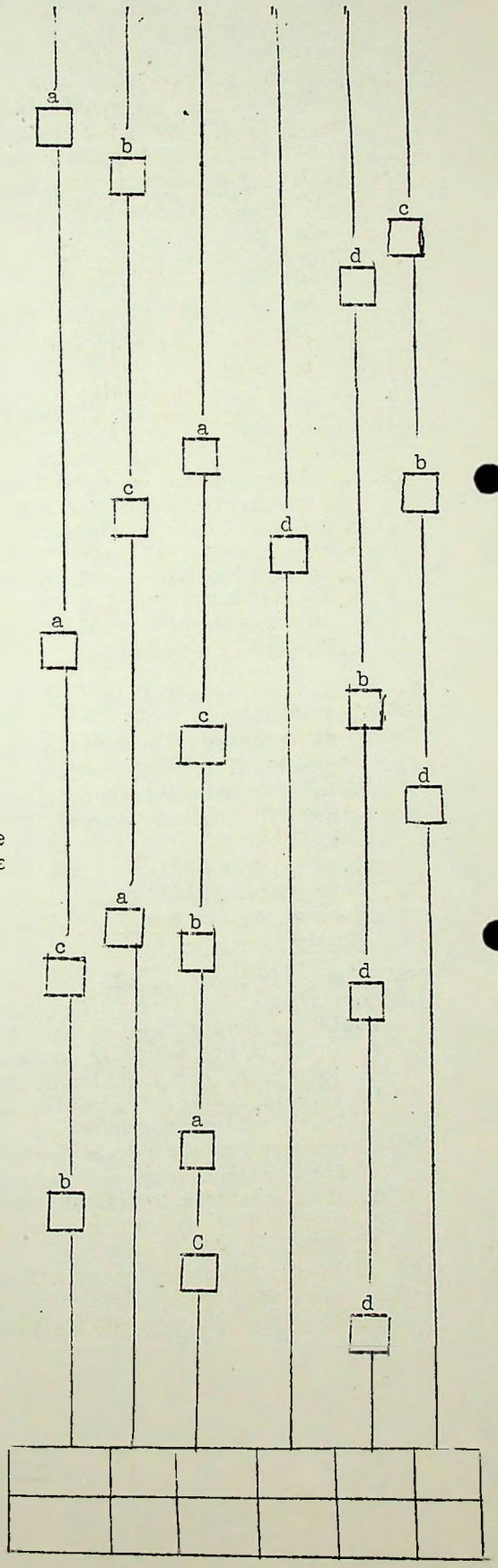
6. When you go tothe theater, do you, as a rule, enjoy most--
   a. plays that treat the lives of great men
   b. ballet or similar imaginative performances
   c. plays that have a theme of human suffering and love
   d. problem plays that argue consistently for some point of view

7. Assuming that you are a man with the necessary ability, and that the salary for each of the following occupations is the same, would you prefer to be a --
   a. mathematician
   b. sales manager
   c. religious preacher
   d. politician

8. If you had sufficient leisure and money, would you prefer to--
   a. make a collection of fine sculptures or paintings
   b. establish a center for the care and training of the feeble-minded
   c. aim at a membership of Parliament or a seat in the Cabinet
   d. establish a business or financial enterprise of your own

9. At an evening discussion with intimate friends of your own sex, are you more interested when you talk about--
   a. themeaning of life
   b. developments in science
   c. literature
   d. socialism and social amelioration

10. Which of the following would you prefer to do during part of your next summer vacation (if your ability and other conditions would permit)-
   a. write and publish an original biological essay or article
   b. stay in some secluded part of the country where you can appreciate fine scenery
   c. enter a local tennis or other athletic tournament
   d. get experience in some new line of business



TOTAL

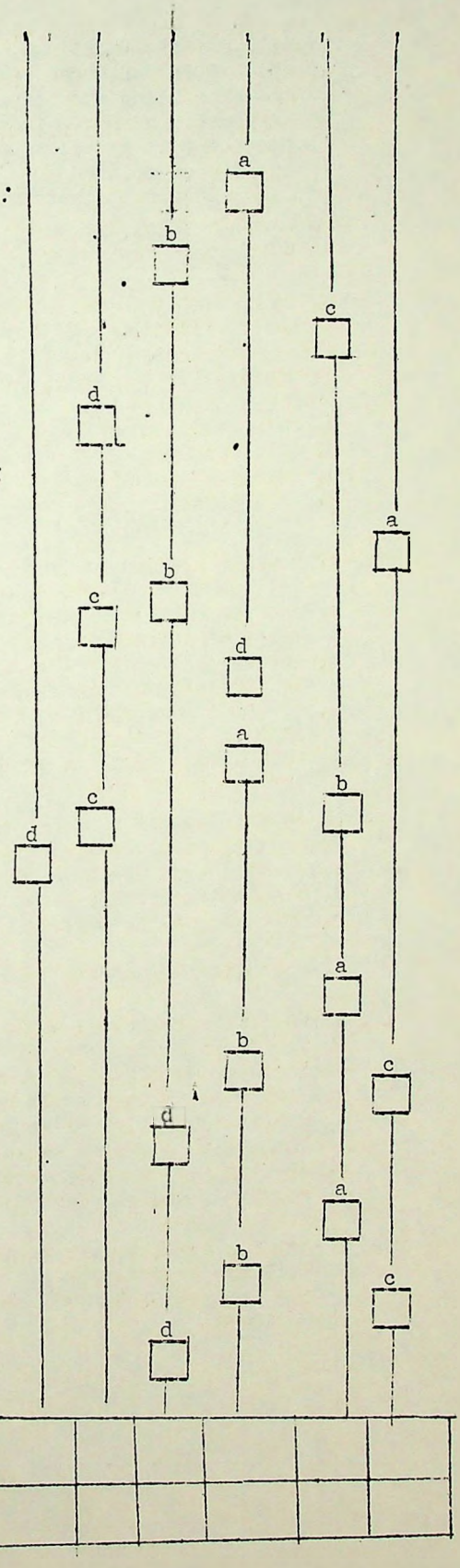
11. Do great exploits and adventures of discovery such as Columbus's, Magellan's, Byrd's and Amundsen's seem to you significant because--
    a. they represent conquests by man over the difficult forces of nature
    b. they add to our knowledge of geography, meteorology, oceanography, etc.
    c. they wield human interests and international feelings throughout the world
    d. they contribute each in a small way to an ultimate understanding of the universe

12. should one guide one's conduct according to, or develop one's chief loyalties toward--
    a. one's religious faith
    b. ideals of beauty
    c. one's occupational organization and associates
    d. ideals of charity

13. To what extent do the following famous persons interest you --
    a. Florence Nightingale
    b. Napoleon
    c. Henry Ford
    d. Galileo

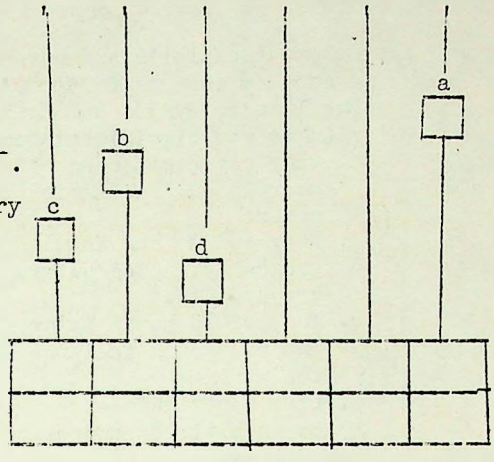
14. In choosing a wife would you prefer a woman who-- (Men answer the alternative form below)
    a. can achieve social prestige, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in her attitudes toward life
    d. is gifted along artistic lines

    (For women) Would you prefer a husband who
    a. is successful in his profession, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in his attitudes toward life
    d. is gifted along artistic lines



TOTAL

15. Viewing Ajanta Paintings, would you tend to think of those --
    a. as expressing the highest spiritual aspirations and emotions
    b. as the most priceless and irreplaceable ever painted
    c. in relation to their place in history
    d. the quintessence of harmony and design



TOTAL

FOR RESTRICTED USE ONLY

ALLPORT : VERNON : LINDZEY

STUDY OF VALUES

Part I

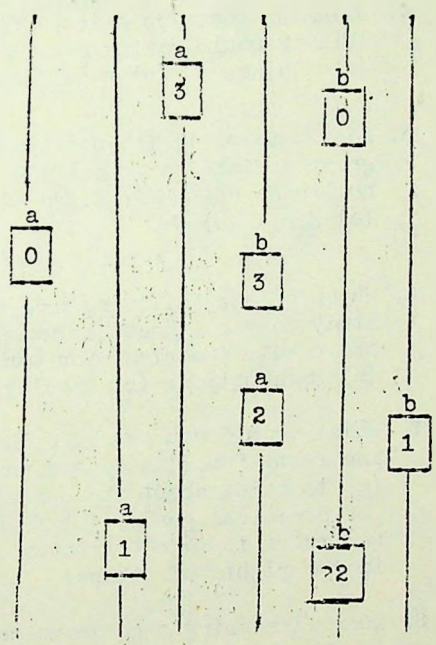
DIRECTIONS : A number of controversial statements or questions with two alternative answers are given below. Indicate your personal preferences by writing appropriate figures in the boxes to the right of each question. Some of the alternatives may appear equally attractive or unattractive to you. Nevertheless, please attempt to choose the alternative that is relatively more acceptable to you. For each question you have three points that you may distribute in any of the following combinations.

1. If you agree with alternative (a) and disagree with (b), write 3 in the first box and 0 is the second box, thus

2. If you agree with (b); disagree with (a) , write

3. If you have a slight preference for (a) over (b), write

4. If you have a slight preference for (b) over (a), write



Do not write any combination of numbers except one of these four. There is no time limit, but do not linger over any one question or statement, and do not leave out any of the questions unless you find it really impossible to make a decision.

1. The main object of scientific research should be the discovery of truth rather than its practical applications.
(a) Yes; (b) No.

2. Taking the Bible/Ramayana/Koran as a whole, one should regard it from the point of view of its beautiful mythology and literary style rather than as a spiritual revelation.
(a) Yes; (b) No.

3. Which of the following men do you think should be judged as contributing more to the progress of mankind ?
(a) Aristotle; (b) Abraham Lincoln.

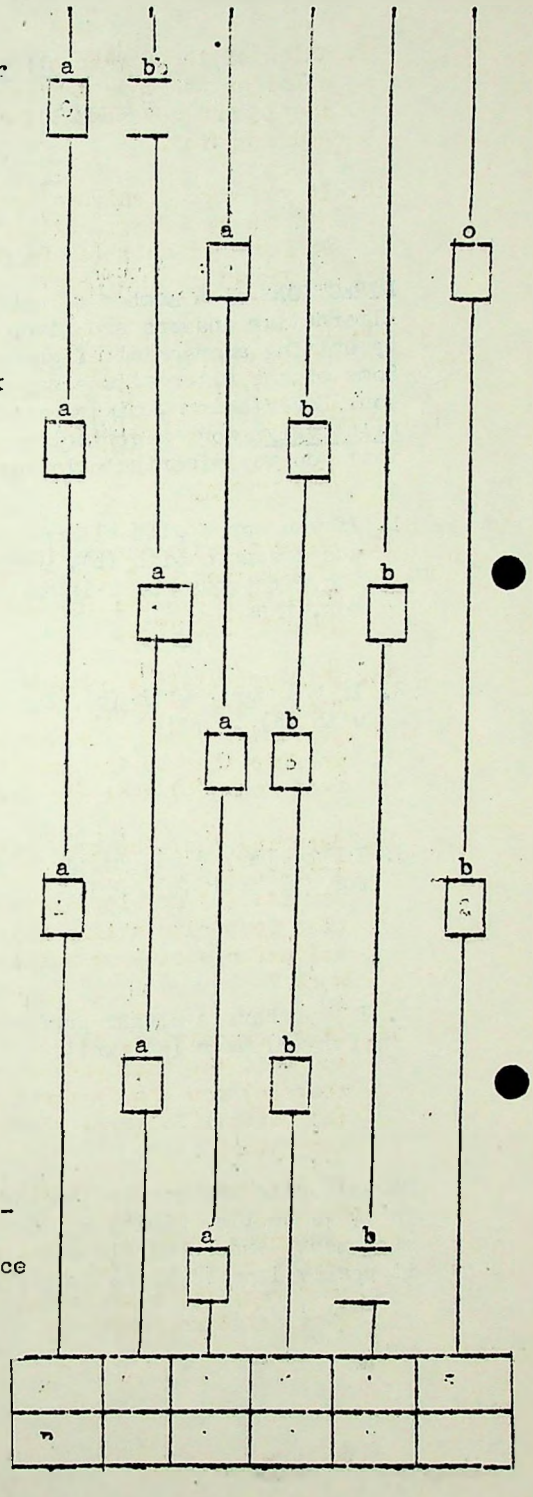
4. Assuming that you have sufficient ability would you prefer to be:
(a) a banker; (b) a politician?

5. Do you think it is justifiable for great artists to be selfish and negligent of the feelings of others?
(a) Yes; (b) No.

6. Which of the following branchesof study do you expect ultimately will prove more important for mankind ?
(a) Mathematics; (b) Theology

7. Which would you consider the more important function of modern leaders?
(a) to bring about the accomplishment of practical goals; (b) to encourage followers to take a greater interest in the rights of others.

8. When witnessing a gorgeous ceremony (ecclesiastical or academic, induction into office, etc.), are you more impressed; (a) by the colour and pageantry of the occasion itself; (b) by the influence and strength of the group?



TOTAL

9. Which of these character traits do you consider the more desirable? (a) high ideals and reverence: (b) unselfishness and sympathy.

10. If you were a university professor and had the necessary ability, would you prefer to teach: (a) Poetry; (b) chemistry and physics?

11. If you should see the following news items with headlines of equal size in your morning paper, which would you read more attentively? (a) RELIGIOUS DIFFERENCES WITHIN ANY COMMUNITY: (b) GREAT IMPROVEMENTS IN MARKET CONDITIONS.

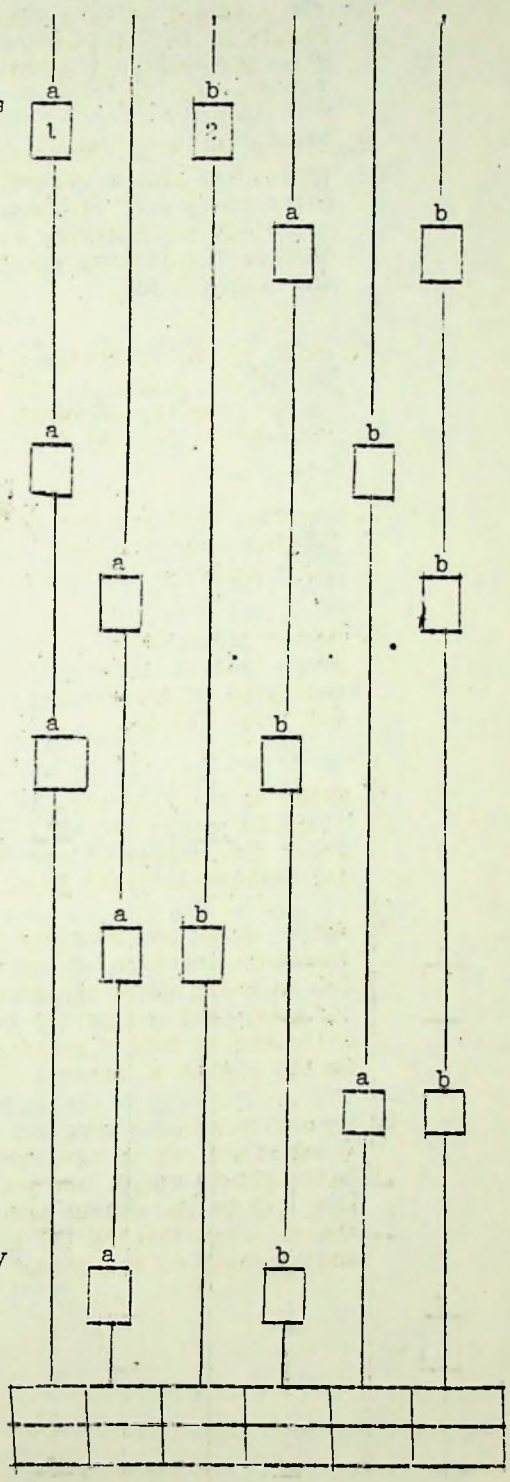
12. Under circumstances similar to those of Question 11 ? (a) SUPREME COURT RENDERS DECISION: (b) NEW SCIENTIFIC THEORY ANNOUNCED.

13. When you visit a cathedral/temple/ mosque are you more impressed by a pervading sense of reverence and worship than by the architectural features. (a) Yes; (b) No.

14. Assuming that you have sufficient leisure time, would you prefer to use it: (a) developing your mastery of a favourite skill; (b) doing volunteer social or public service work ?

15. At an exposition, do you chiefly like to go to the buildings where you can see: (a) new manufactured products; (b) scientific (e.g. chemical) apparatus?

16. If you had the opportunity, and if nothing of the kind existed in the community where you live, would you prefer to found: (a) a debating society or forum; (b) a classical music club (Sangeet Sammelan)



17. The aim of the religious organizations at the present time should be: (a) to bring our altruistic and charitable tendencies; (c) to encourage spiritual worship and a sense of communionwith the highest

18. If you had some time to spend in a waiting room and there were only two magazines to choose from, would you prefer: (a) SCIENTIFIC AGE; (b) ARTS AND DECORATIONS?

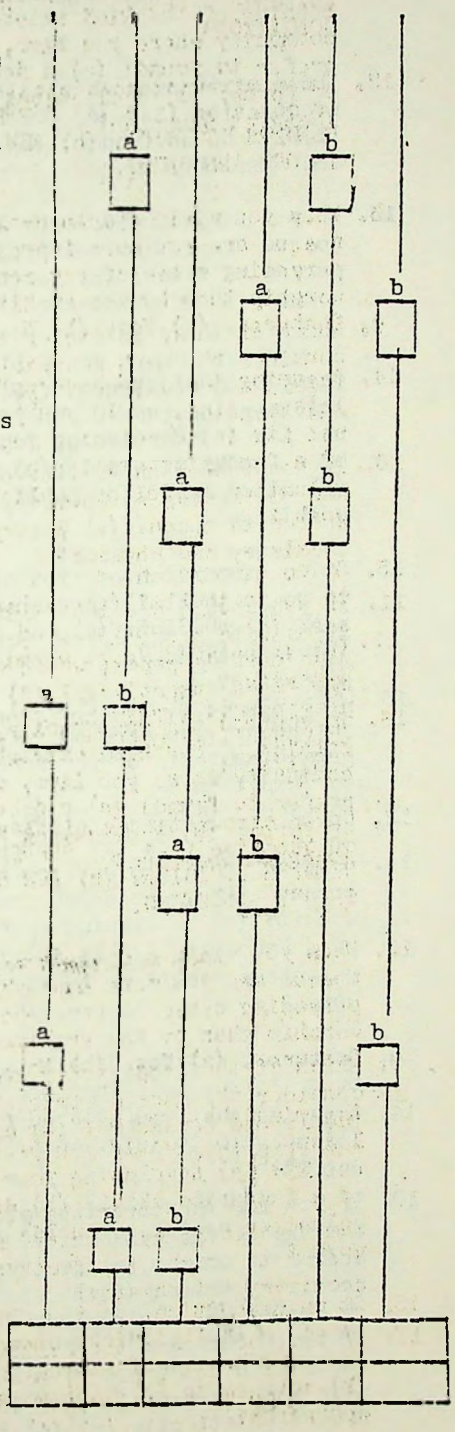
19. Would you prefer to hear a series of lectures on: (a) the comparative merits of the forms of government in Britain and in the United States; (b) the comparative development of the great religious faiths?

20. Which of the following would you consider the more important function of education? (a) its preparation for practical achievement and financial reward; (b) its preparation for participation in community activities and aiding less fortunate persons.

21. Are you more interested in reading accounts of the lives and works of men such as: (a) Alexander, Julius Caesar, and Ashoka; (c) Aristotle, Socrates, and Radhakrishnan

22. Are our modern industrial and scientific developments signs of a greater degree of civilization than those attained by any previous society, the Greeks, for example? (a) Yes; (b) No.

23. If you were engaged in an industrial organization (and assuming salaries to be equal), would you prefer to work; (a) as a counsellor for employees; (b) in an administrative position?



TOTAL

24. Given your choice between two books to read, are you more likely to select:
(a) THE STORY OF RELIGION IN INDIA:
(b) THE STORY OF INDUSTRY IN INDIA:

25. Would modern society benefit more from: (a) more concern for the rights and welfare of citizens; (b) greater knowledge of the fundamental laws of human behaviour.

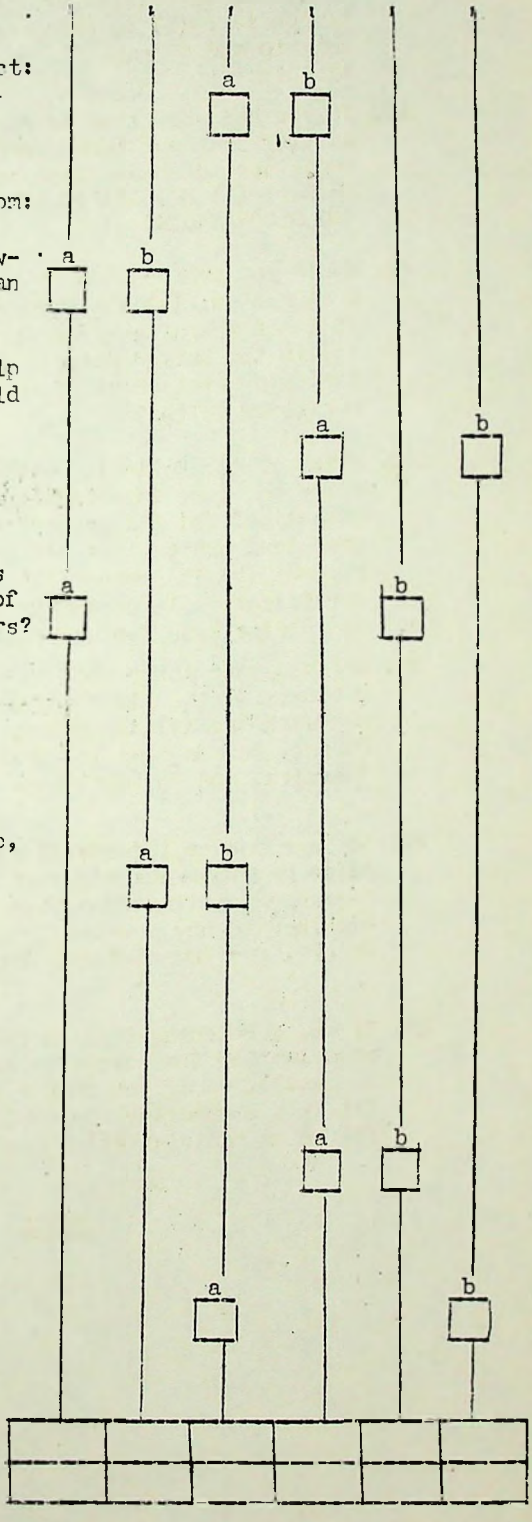
26. Suppose you were in a position to help raise standards of living, or to mould public opinion. Would you prefer to influence: (a) standards of living; (b) public opinion?

27. Would you prefer to hear a series of popular lectures on: (a) the progress of social service work in your part of the country; (b) contemporary painters?

28. All the evidence that has been impartially accumulated goes to show that the universe has evolved to its present state in accordance with natural principles, so that there is no necessity to assume a first course, cosmic purpose, or God behind it.
(a) I agree with this statement;
(b) I disagree

29. In a paper, such as the New York Sunday Times, are you more likely to read: (a) the real estate sections and the account of the stock market; (b) the section on picture galleries and exhibitions?

30. Would you consider it more important for your child to secure training in (a) religion; (b) athletics?



TOTAL

Part II

DIRECTIONS: Each of the following situations or questions is followed by four possible attitudes or answers. Arrange these answers in the order of your personal preference by writing, in the appropriate box at the right, a score of 4, 3, 2, or 1. To the statement you prefer most give 4, to the statement that is second most attractive 3, and so on.

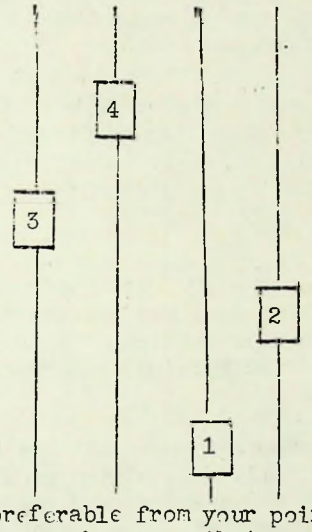
Example: If this were a question and the following statements were alternative choices you would place:

4 in the box if this statement appeals to you.

3 in the box if this statement appeals to you second best.

2 in the box if this statement appeals to you third best

1 in the box if this statement represents your interest or preference least of all.



You may think of answers which would be preferable from your point of view to any of those listed. It is necessary, however, that you make your selection from the alternatives presented, and arrange all four in order of their desirability, guessing when your preferences are not distinct. If you find it really impossible to state your preference, you may omit the question. Be sure not to assign more than one 4, one 3, etc., for each question.

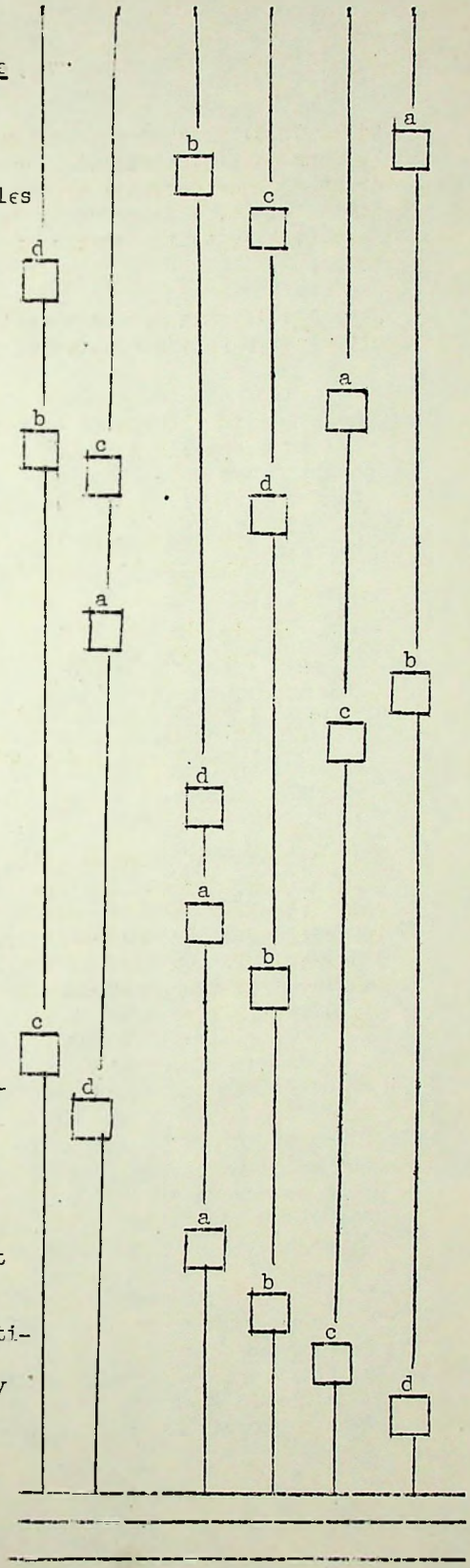
1. Do you think that a good government should aim chiefly at--(Remember to give your first choice 4, etc.)
   a. more aid for the poor, sick and old
   b. the development of manufacturing and trade
   c. introducing highest ethical principles into its policies and diplomacy
   d. establishing a position of prestige and respect among nations.

2. In your opinion, can a man who works in business all the week best spend Sunday in
   a. trying to educate himself by reading serious books
   b. Trying to win at golf, or racing
   c. going to anorchestral concert
   d. hearing a really good sermon

3. If you could influence the educational policies of the public schools of some city, would you undertake--
   a. to promote the study and participation in music and fine arts.
   b. to stimulate the study of social problems
   c. to provide additional laboratory facilities
   d. to increase the practical value of courses

4. Do you prefer a friend (of your own sex) who--
   a. is efficient, industrious and of a practical turn of mind.
   b. is seriously interested in thinking out his attitude toward life as a whole
   c. possess qualities of leadership and organizing ability.
   d. shows artistic and emotional sensitivity

5. If you lived in a small town and had more than enough income for your needs, would you prefer to--
   a. apply it productively to assist commercial and industrial development
   b. help to advance the activities of local religious groups
   c. give it for the development of scientific research in your locality
   d. give it to the Family Welfare Society



TOTAL

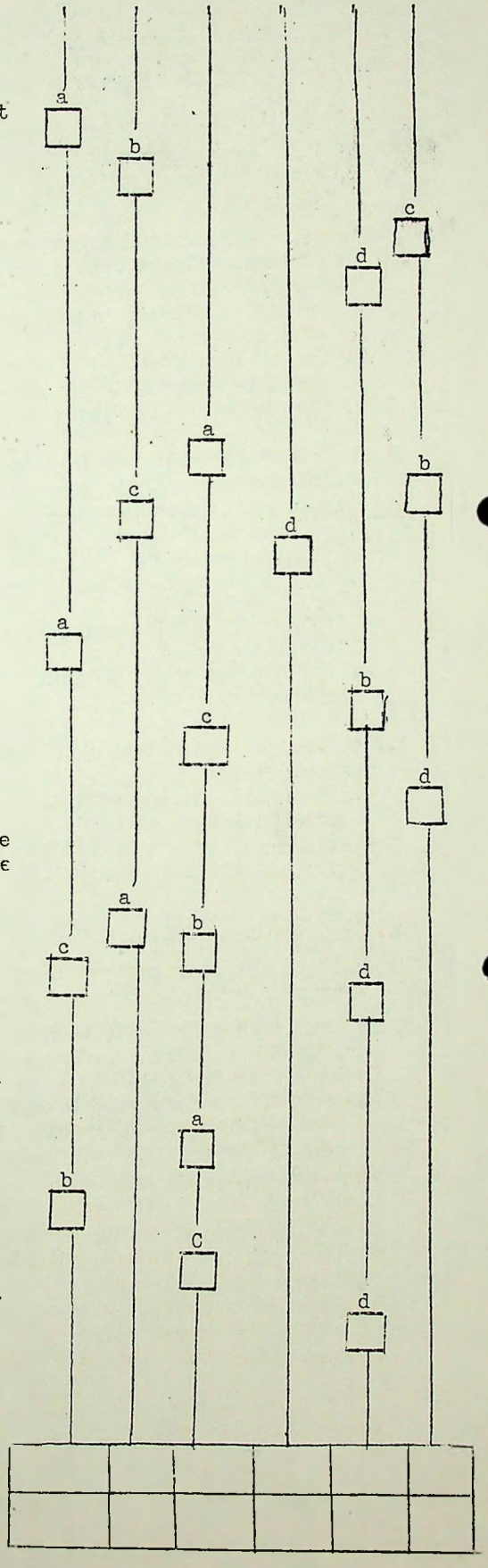
6. When you go tothe theater, do you, as a rule, enjoy most--
   a. plays that treat the lives of great men
   b. ballet or similar imaginative performances
   c. plays that have a theme of human suffering and love
   d. problem plays that argue consistently for some point of view

7. Assuming that you are a man with the necessary ability, and that the salary for each of the following occupations is the same, would you prefer to be a --
   a. mathematician
   b. sales manager
   c. religious preacher
   d. politician

8. If you had sufficient leisure and money, would you prefer to--
   a. make a collection of fine sculptures or paintings
   b. establish a center for the care and training of the feeble-minded
   c. aim at a membership of Parliament or a seat in the Cabinet
   d. establish a business or financial enterprise of your own

9. At an evening discussion with intimate friends of your own sex, are you more interested when you talk about--
   a. themeaning of life
   b. developments in science
   c. literature
   d. socialism and social amelioration

10. Which of the following would you prefer to do during part of your next summer vacation (if your ability and other conditions would permit)-
   a. write and publish an original biological essay or article
   b. stay in some secluded part of the country where you can appreciate fine scenery
   c. enter a local tennis or other athletic tournament
   d. get experience in some new line of business



TOTAL

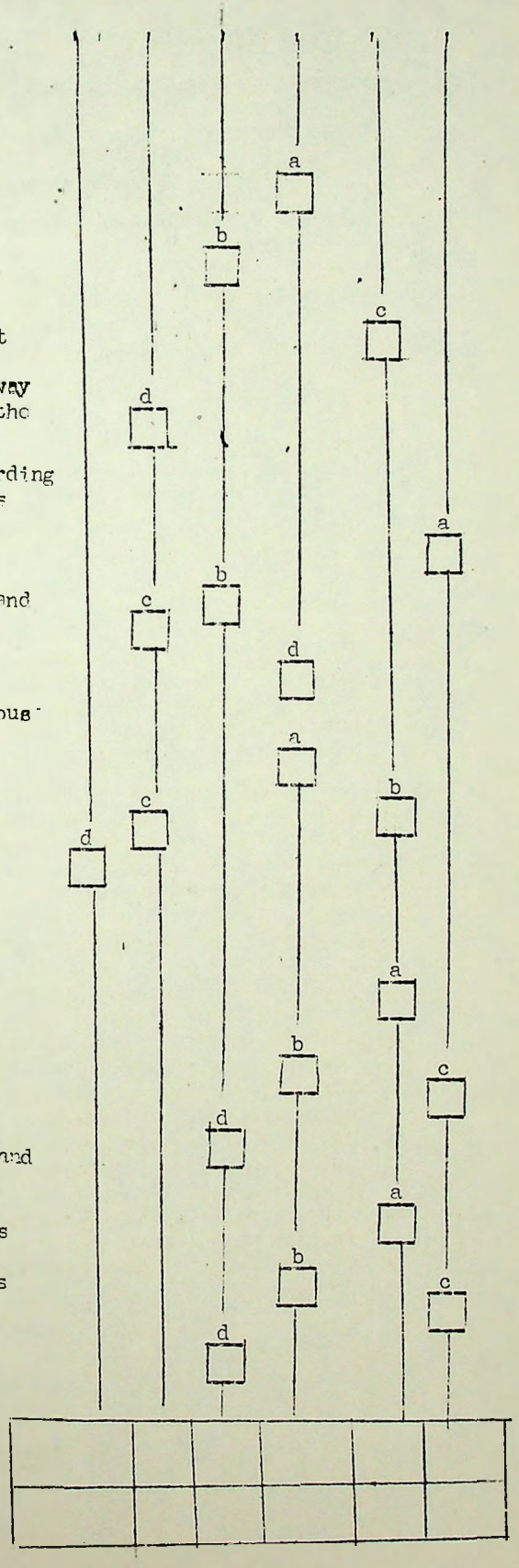
11. Do great exploits and adventures of discovery such as Columbus's, Magellan's, Byrd's and Amundsen's seem to you significant because--
    a. they represent conquests by man over the difficult forces of nature
    b. they add to our knowledge of geography, meteorology, oceanography, etc.
    c. they wield human interests and international feelings throughout the world
    d. they contribute each in a small way to an ultimate understanding of the universe

12. should one guide one's conduct according to, or develop one's chief loyalties toward--
    a. one's religious faith
    b. ideals of beauty
    c. one's occupational organization and associates
    d. ideals of charity

13. To what extent do the following famous persons interest you --
    a. Florence Nightingale
    b. Napoleon
    c. Henry Ford
    d. Galileo

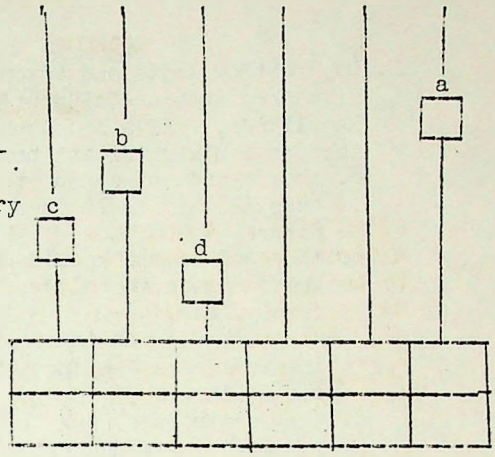
14. In choosing a wife would you prefer a woman who-- (Men answer the alternative form below)
    a. can achieve social prestige, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in her attitudes toward life
    d. is gifted along artistic lines

    (For women) Would you prefer a husband who
    a. is successful in his profession, commanding admiration from others
    b. likes to help people
    c. is fundamentally spiritual in his attitudes toward life
    d. is gifted along artistic lines



TOTAL

15. Viewing Ajanta Paintings, would you tend to think of those --
    a. as expressing the highest spiritual aspirations and emotions
    b. as the most priceless and irreplaceable ever painted
    c. in relation to their place in history
    d. the quintessence of harmony and design



TOTAL

DEV

DEPT OF COMMUNITY MEDICINE

ST JOHN'S MEDICAL COLLEGE, BANGALORE 34

RURAL HEALTH EVALUATION REPORT

The following pages contain a number of incomplete stories. We want you to read and complete them giving your imaginative best as to what happened from the point where it was left off. There are no right or wrong conclusions to those stories.

Please do not try to read all of them first and then go back over them to write the conclusions.

You have only 5 minutes for each. In order to finish all of them in the allotted time you will have to write your spontaneous reaction immediately after reading each story.

1. Dr Singh is a young doctor who has finished a year's surgical house officership in his medical college hospital. He has to choose between two assignments each for a period of approximately 2 years.

The first is a government primary health centre only 5 miles from the medical college with good road connections so that it is easy for both patients and the doctor to go back and forth to the city. The second is a health centre in an isolated valley in the Himalayas, which is supported by his own religious organization. It is in an area of great medical need where communications with the outside world are frequently out off by weather and bad roads.

What choice did he make and why ?

2. Dr. Banerji is a successful practitioner who had never been out of Calcutta. He has just returned from his first visit to a village where he had gone with a wedding party. In talking to Dr Chatterji, a young colleague who was born and brought up in a village, he expresses in strong languages his revulsion and disgust at the lack of laterines in the village. He vows, that he will never go back to a village again because he can't bear the thought of going out to the fields morning and night. Dr Chatterji responds

3. Dr Viswanathan had been surprised to find that his 5 years in primary health centre had passed as a rapid and pleasant interlude. His wife and two children aged 4½ and 2½ enjoyed the life in the village and the children played happily with some of the village children. One spring day the doctor saw 5 cases of severe vomitting and diarrhoea in the dispensary. On going home he was called next door and found the 4 year old friend of his own child dying of cholera. Dr Viswanathan immediately

4. On graduation from the medical college Dr Gupta had three alternative choices. He could accept a job in a government Primary Health Centre where he could start earning Rs.550/- per month. His maternal uncle who was private practitioner in a big city invited him to join his clinic as a junior at 200 rupees a month. He was selected to do post-graduate work in a subject for which he had no particular preference. After careful consideration [illegible] decided to

ST JOHN'S MEDICAL COLLEGE
BANGALORE

PARTICIPATION ASSESSMENT (First Step)

1. Check off the things that you did during today's session.

_____ I listened
_____ I read
_____ I copied down notes
_____ I wrote down my own ideas
_____ I mentally evaluated ideas presented by others
_____ I offered ideas of my own verbally
_____ I took part in small group discussion
_____ I took part in whole group discussion
_____ Any other ? Specify : _____

_____ I engaged in problem solving individually ----- in a team
_____ I related theoretical concepts to my own field experience
_____ I role-played
_____ I participated in practical activity
_____ I created or helped create a (communication) message
_____ I got bored
_____ I fell asleep

2. Which statement best describes the way you feel in a new group ? I generally.

_____ prefer to sit quietly and listen to others
_____ feel quite at ease taking part in discussion
_____ find myself ready for some form of leadership role
_____ sometimes wish I could take over and structure the discussion
_____ feel ill at ease
_____ prefer to listen for a while and then participate after I have a feel for the group
_____ other _____

3. Imagine that you have been approached by a social reformer who wants you to change some aspect of your lifestyle in the interest of the nation or of the world, or perhaps just "for your own good". You appreciate the new point of view, but are also aware that any change on your part would involve certain personal risk and criticism from some of your peers. What would you do? You may check off more than one box, but if so, rank them by number.

_____ Take the social reformer's advice and adopt the change right away.
_____ Wait to see what other people will do.
_____ Actively look for other community members who are interested, and form _____ a study group _____ an action group
_____ Try to learn more about the subject without letting anyone know of your interest
_____ Other response (specify) _____

.... 2

4. Facing problems
1. List 5 specific problems that you and people in your peer group often face.
2. Number them in order of difficulty of solution.
3. Put an asterisk in front of those that can be solved only through influential connections.
4. Put a circle around the ones that require a lot of money to resolve.
5. Underline the ones that affect you in particular.
6. Re-underline the one that would make you most happy if solved.
7. Against each of the problems that affect you, write the date when you last did something towards solving them.
8. Check off the ones that you have been able to solve
9. Consider: what does this exercise tell you about your ability to confront problems ?

---

prk/191281

ST JOHN'S MEDICAL COLLEGE
BANGALORE

PARTICIPATION ASSESSMENT (First Step)

1. Check off the things that you did during today's session.

_____ I listened
_____ I read
_____ I copied down notes
_____ I wrote down my own ideas
_____ I mentally evaluated ideas presented by others
_____ I offered ideas of my own verbally
_____ I took part in small group discussion
_____ I took part in whole group discussion
_____ Any other ? Specify : _____

_____ I engaged in problem solving individually ----- in a team
_____ I related theoretical concepts to my own field experience
_____ I role-played
_____ I participated in practical activity
_____ I created or helped create a (communication) message
_____ I got bored
_____ I fell asleep

2. Which statement best describes the way you feel in a new group ? I generally:

_____ prefer to sit quietly and listen to others
_____ feel quite at ease taking part in discussion
_____ find myself ready for some form of leadership role
_____ sometimes wish I could take over and structure the discussion
_____ feel ill at ease
_____ prefer to listen for a while and then participate after I have a feel for the group
_____ other _____

3. Imagine that you have been approached by a social reformer who wants you to change some aspect of your lifestyle in the interest of the nation or of the world, or perhaps just "for your own good". You appreciate the new point of view, but are also aware that any change on your part would involve certain personal risk and criticism from some of your peers. What would you do? You may check off more than one box, but if so, rank them by number.

_____ Take the social reformer's advice and adopt the change right away.
_____ Wait to see what other people will do.
_____ Actively look for other community members who are interested, and form _____ a study group _____ an action group
_____ Try to learn more about the subject without letting anyone know of your interest
_____ Other response (specify) _____

.... 2

4. Facing problems

1. List 5 specific problems that you and people in your peer group often face.
2. Number them in order of difficulty of solution.
3. Put an asterisk in front of those that can be solved only through influential connections.
4. Put a circle around the ones that require a lot of money to resolve.
5. Underline the ones that affect you in particular.
6. Re-underline the one that would make you most happy if solved.
7. Against each of the problems that affect you, write the date when you last did something towards solving them.
8. Check off the ones that you have been able to solve
9. Consider: what does this exercise tell you about your ability to confront problems ?

---

prk/191281

ST JOHN'S MEDICAL COLLEGE
BANGALORE

PARTICIPATION ASSESSMENT (First Step)

1. Check off the things that you did during today's session.

_____ I listened
_____ I read
_____ I copied down notes
_____ I wrote down my own ideas
_____ I mentally evaluated ideas presented by others
_____ I offered ideas of my own verbally
_____ I took part in small group discussion
_____ I took part in whole group discussion
_____ Any other ? Specify : _____

_____ I engaged in problem solving individually ----- in a team
_____ I related theoretical concepts to my own field experience
_____ I role-played
_____ I participated in practical activity
_____ I created or helped create a (communication) message
_____ I got bored
_____ I fell asleep

2. Which statement best describes the way you feel in a new group ? I generally:

_____ prefer to sit quietly and listen to others
_____ feel quite at ease taking part in discussion
_____ find myself ready for some form of leadership role
_____ sometimes wish I could take over and structure the discussion
_____ feel ill at ease
_____ prefer to listen for a while and then participate after I have a feel for the group
_____ other _____

3. Imagine that you have been approached by a social reformer who wants you to change some aspect of your lifestyle in the interest of the nation or of the world, or perhaps just "for your own good". You appreciate the new point of view, but are also aware that any change on your part would involve certain personal risk and criticism from some of your peers. What would you do? You may check off more than one box, but if so, rank them by number.

_____ Take the social reformer's advice and adopt the change right away.
_____ Wait to see what other people will do.
_____ Actively look for other community members who are interested, and form _____ a study group _____ an action group
_____ Try to learn more about the subject without letting anyone know of your interest
_____ Other response (specify) _____

... 2

4. Facing problems

1. List 5 specific problems that you and people in your peer group often face.
2. Number them in order of difficulty of solution.
3. Put an asterisk in front of those that can be solved only through influential connections.
4. Put a circle around the ones that require a lot of money to resolve.
5. Underline the ones that affect you in particular.
6. Re-underline the one that would make you most happy if solved.
7. Against each of the problems that affect you, write the date when you last did something towards solving them.
8. Check off the ones that you have been able to solve
9. Consider: what does this exercise tell you about your ability to confront problems ?

---

prk/191281

Pleasant	8	7	6	5	4	3	2	1	Unpleasant
Friendly	8	7	6	5	4	3	2	1	Unfriendly
Rejecting	8	7	6	5	4	3	2	1	Accepting
Helpful	8	7	6	5	4	3	2	1	Frustrating
Unenthusiastic	8	7	6	5	4	3	2	1	Enthusiastic
Tense	8	7	6	5	4	3	2	1	Relaxed
Distant	8	7	6	5	4	3	2	1	Close
Cold	8	7	6	5	4	3	2	1	Warm
Co-operative	8	7	6	5	4	3	2	1	Uncooperative
Supportive	8	7	6	5	4	3	2	1	Hostile
Boring	8	7	6	5	4	3	2	1	Interesting
Quarrelsome	8	7	6	5	4	3	2	1	Harmonious
Self-assured	8	7	6	5	4	3	2	1	Hesitant
Efficient	8	7	6	5	4	3	2	1	Inefficient
Gloomy	8	7	6	5	4	3	2	1	Cheerful
Open	8	7	6	5	4	3	2	1	Guarded

LEAST PREFERRED COLLEAGUE QUESTIONNAIRE

Directions:

Please read these instructions carefully. Think of the person you can work least well with. He may be someone you work with now, or he may be someone you knew in the past. He need not be the person you like least, but rather should be that person with whom you have (had) the most difficulty in getting a job done. Describe this person as he appears to you. Circle the number most appropriate for the person

Pleasant	8	7	6	5	4	3	2	1	Unpleasant
Friendly	8	7	6	5	4	3	2	1	Unfriendly
Rejecting	8	7	6	5	4	3	2	1	Accepting
Helpful	8	7	6	5	4	3	2	1	Frustrating
Unenthusiastic	8	7	6	5	4	3	2	1	Enthusiastic
Tense	8	7	6	5	4	3	2	1	Relaxed
Distant	8	7	6	5	4	3	2	1	Close
Cold	8	7	6	5	4	3	2	1	Warm
Co-operative	8	7	6	5	4	3	2	1	Uncooperative
Supportive	8	7	6	5	4	3	2	1	Hostile
Boring	8	7	6	5	4	3	2	1	Interesting
Quarrelsome	8	7	6	5	4	3	2	1	Harmonious
Self-Assured	8	7	6	5	4	3	2	1	Hesitant
Efficient	8	7	6	5	4	3	2	1	Inefficient
Gloomy	8	7	6	5	4	3	2	1	Cheerful
Open	8	7	6	5	4	3	2	1	Guarded

MOST PREFERRED COLLEAGUE QUESTIONNAIRE

Directions:

Please read these instructions carefully. Think of the person with whom you can work best with. He may be someone you work with now, or he may be someone you knew in the past. He does not have to be the person you like most, but should be the person with whom you had little or no difficulty in getting a job done. Describe this person as he appears to you. Circle the number most appropriate for this person.

15/7/79

Red dane project

Red Dane	Local (Halikar)
More Milk	↓ 1 litre
Matures 10 mths	3 yrs
Inter calving period ↓	

- Bull Mothers Farm
- Upgrading local stock - AI
- 154 centres in 6 taluks - VLW - Milk assts

Trg programme i) Adult farmers - 3 days
ii) Young farmers - 4 wks
iii) IPDP/SFDA/other programs — deputees 10 days
— unemployed graduates

Cow
2.5 litres/day — Green grass
4-6 litres — concentrates 40% of milk yield
25 Kgs/day — Groundnut Cake 96p
Cotton seed
Maize/wheat bran
mineral mix

Cross = Green pa ?
Rod. ,
Special types

5a-75 Reddiane

Diseases of Cows	Contagious
Blackquarter	1. Foot + Mouth — Ulcers in foot + mouth esp tongue, profuse salivation, wounds in the hooves (maggots gp)
HS	2 Rinderpest — Shedding di[illegible] bad odour + Ulcers in mouth, gums,
F+M	3. Anthrax — Sudden death (blood tre), post mortem — blood from nose + anus bloating stomach
Anthrax	4. Black quarter, swelling of quarters — front or black legs; crepitations over swelling
TB	5 Haemorrhagic Septicem — usually buffaloes — swelling in the neck, mouth breathing, tongue out, heavy salivation, suffocation 2 to 24 hrs
	6 TB — 0.5% in local animal — asymptomatic.

Sulphamezathine — 50-100 ml (depending on size)

Terramycin

Sulphas + Penicillin

Vaccines against all except TB

— Mastitis - bacterial infection

poor hygiene — Nephritis

7 days rise in immunity — Protection 6 mths - 1 yr

BQ, B, HS

SOLVING PROBLEMS AND MAKING DECISIONS

When a group (or an individual) is faced with solving a problem or making a decision, there are five steps which can be followed. These steps will make for greater clarity and effectiveness while considering the problem or the decision, and they will also lead to a better final decision.

1. Define the problem

Ask yourselves "What is the real problem before us?" If you cannot agree on what the problem is, you certainly will not agree on the solution! A clearly-defined problem is already a great help towards a solution.

What appears to be the problem may be only a superficial sympton. Underneath there may be larger and deeper issues.

Express the problem in "How to..." terms. Do not say, 'the problem is moderating discussions', but, " The problem is how to learn to moderate discussions effectively".

2. COLLECT POSSIBLE SOLUTIONS

Ask yourselves, 'what are the possible solutions to this problem?' Make a list of all the ideas, possible solutions and suggestions without evaluating any of them. (The process is similar to 'brain-storming').

It is important to separate the collecting of ideas in this step from evaluation: The evaluation should come only in the third step. If you evaluate ideas in this second step, itwill inhibit the contribution of further ideas.

Make the list of possible solutions as long and complete as possible. Some people believe that the quality of the final decision depends on the number of possible solutions collected during this second step.

3. Evaluate the possible solutions and choose the best

Ask yourselves, "Of all the alternatives we have listed, which is the best solution?"

Weigh the pros and cons of each possible solution.

Encourage dissent and disagreement among the members of the group. This will help in the completed examination of every possibility. Beware of easy agreements--they probably have not been thought through completely. At the same time, avoid being defensive or making others feel defensive. Try to separate the ideas and solutions from the individuals who contributed them.

There are two important aspects to an effective decision One is the quality of the decision. Ask yourselves, "Does this decision accomplish our purpose? Will it effectively solve the problem?" The second aspect is the acceptability of the decision to those who have to carry it out.

If you find that you now need further information or an expert opinion, get it before the decision is made, not afterwards!

Consider whether the group itself is ready to make a decision. Sometimes groups (like individuals) need time to 'think over' a decision before finally making it.

4. Implement the decision

Decide on the steps for implementing the decisions. Ask yourselves, "who is going to do what? When? How? Be sprcific put names against actions.

A decision which does not include details of how the decision is to be implemented may be ineffective and even useless. Lots of good ideas are never translated into action because their implementation is not taken care of.

As well as deciding who will do what, when and how, there may be other questions, such as, 'who else should be informed of this decision?.

5. Follow-up

Ask yourselves, "How will we check on how this decision is working in action?" It is important that the group decides at the time they make the decision how they are going to arrange for follow-up and feedback.

Source: McGrath, E.H., Basic Managerial Skills for All, XLRI, Jamshedpur, 1978.

PEOPLE IN DEVELOPMENT - A Trainer's Manual for groups John Staley.

SOLVING PROBLEMS AND MAKING DECISIONS

When a group (or an individual) is faced with solving a problem or making a decision, there are five steps which can be followed. These steps will make for greater clarity and effectiveness while considering the problem or the decision, and they will also lead to a better final decision.

1. Define the problem

Ask yourselves "What is the real problem before us?" If you cannot agree on what the problem is, you certainly will not agree on the solution! A clearly-defined problem is already a great help towards a solution.

What appears to be the problem may be only a superficial sympton. Underneath there may be larger and deeper issues.

Express the problem in "How to..." terms. Do not say, 'the problem is moderating discussion', but, " The problem is how to learn to moderate discussions effectively ".

2. COLLECT POSSIBLE SOLUTIONS

Ask yourselves, 'what are the possible solutions to this problem?' Make a list of all the ideas, possible solutions and suggestions without evaluating any of them. (The process is similar to 'brain-storming').

It is important to separate the collecting of ideas in this step from evaluation: The evaluation should come only in the third step. If you evaluate ideas in this second step, itwill inhibit the contribution of further ideas.

Make the list of possible solutions as long and complete as possible. Some people believe that the quality of the final decision depends on the number of possible solutions collected during this second step.

3. Evaluate the possible solutions and choose the best

Ask yourselves, "Of all the alternatives we have listed, which is the best solution?"

Weigh the pros and cons of each possible solution.

Encourage dissent and disagreement among the members of the group. This will help in the completed examination of every possibility. Beware of easy agreements-they probably have not been thought through completely. At the same time, avoid being defensive or making others feel defensive. Try to separate the ideas and solutions from the individuals who contributed them.

There are two important aspects to an effective decision One is the quality of the decision. Ask yourselves, "Does this decision accomplish our purpose? Will it effectively solve the problem?" The second aspect is the acceptability of the decision to those who have to carry it out.

If you find that you now need further information or an expert opinion, get it before the decision is made, not afterwards!

Consider whether the group itself is ready to make a decision. Sometimes groups (like individuals) need time to 'think over' a decision before finally making it.

4. Implement the decision

Decide on the steps for implementing the decisions. Ask yourselves, "who is going to do what? When? How? Be sprcific put names against actions.

A decision which does not include details of how the decision is to be implemented may be ineffective and even useless. Lots of good ideas are never translated into action because their implementation is not taken care of

As well as deciding who will do what, when and how, there may be other questions, such as, 'who else should be informed of this decision?.

5. Follow-up

Ask yourselves, "How will we check on how this decision is working in action?" It is important that the group decides at the time they make the decision how they are going to arrange for follow-up and feedback.

Source: McGrath, E.H., Basic Managerial Skills for All, XLRI, Jamshedpur, 1978.

PEOPLE IN DEVELOPMENT - A Trainer's Manual for groups John Staley.

SOLVING PROBLEMS AND MAKING DECISIONS

When a group (or an individual) is faced with solving a problem or making a decision, there are five steps which can be followed. These steps will make for greater clarity and effectiveness while considering the problem or the decision, and they will also lead to a better final decision.

1. Define the problem

Ask yourselves "What is the real problem before us?" If you cannot agree on what the problem is, you certainly will not agree on the solution! A clearly-defined problem is already a great help towards a solution.

What appears to be the problem may be only a superficial sympton. Underneath there may be larger and deeper issues.

Express the problem in "How to..." terms. Do not say, "the problem is moderating discussion", but, "The problem is how to learn to moderate discussions effectively".

2. COLLECT POSSIBLE SOLUTIONS

Ask yourselves, "what are the possible solutions to this problem?" Make a list of all the ideas, possible solutions and suggestions without evaluating any of them. (The process is similar to 'brain-storming').

It is important to separate the collecting of ideas in this step from evaluation: The evaluation should come only in the third step. If you evaluate ideas in this second step, itwill inhibit the contribution of further ideas.

Make the list of possible solutions as long and complete as possible. Some people believe that the quality of the final decision depends on the number of possible solutions collected during this second step.

3. Evaluate the possible solutions and choose the best

Ask yourselves, "Of all the alternatives we have listed, which is the best solution?"

Weigh the pros and cons of each possible solution.

Encourage dissent and disagreement among the members of the group. This will help in the completed examination of every possibility. Beware of easy agreements-they probably have not been thought through completely. At the same time, avoid being defensive or making others feel defensive. Try to separate the ideas and solutions from the individuals who contributed them.

There are two important aspects to an effective decision One is the quality of the decision. Ask yourselves, "Does this decision accomplish our purpose? Will it effectively solve the problem?" The second aspect is the acceptability of the decision to those who have to carry it out.

If you find that you now need further information or an expert opinion, get it before the decision is made, not afterwards!

Consider whether the group itself is ready to make a decision. Sometimes groups (like individuals) need time to 'think over' a decision before finally making it.

4. Implement the decision

Decide on the steps for implementing the decisions. Ask yourselves, "who is going to do what? When? How? Be sprcific put names against actions.

A decision which does not include details of how the decision is to be implemented may be ineffective and even useless. Lots of good ideas are never translated into action because their implementation is not taken care of.

As well as deciding who will do what, when and how, there may be other questions, such as, 'who else should be informed of this decision?.

5. Follow-up

Ask yourselves, "How will we check on how this decision is working in action?' It is important that the group decides at the time they make the decision how they are going to arrange for follow-up and feedback.

Source: McGrath, E.H., Basic Managerial Skills for All, XLRI, Jamshedpur, 1978.

PEOPLE IN DEVELOPMENT - A Trainer's Manual for groups John Staley.

Training Page: VII

Development Worker:

1. You are a community development worker and have chosen to work in the particular village simulated in the Game.

2. The other players in the game represent families which live in this village.

3. During the course of the Game the village will pass through a series of consecutive years.

4. You may visit the village at any time after the third year. (This interval is simply to give the other players time to learn their roles in the Game). The Assistant Organiser will inform you when the third year ends.

5. The villagers will not know who you are, nor why you have come. You will have to introduce yourself and explain your intentions.

6. You will also have to find out for yourself about the village, the villagers, and their problems.

7. If you wish, you can plan any one of four different kinds of relief and development programmes.

8. You have no financial or other resources yourself, but if you wish you can apply on one of the prescribed forms to a donor agency for 'units' for a programme. In that case there are certain procedures of the donor agency to be followed:

   (a) An application must be submitted in writing. It should be handed to the Organiser of the Game.

   (b) You will be informed of the agency's decision on the application after some time.

   (c) If you receive a grant you can use it only for the purpose requested. If you want to change the purpose you must apply again and wait for the agency's decision.

   (d) You can make more than one application, but only if you have spent or returned any previous grant.

9. The programmes possible are as follows:

   (a) Relief: Up to 1000 units can be requested for direct distribution. If a grant is made, this programme can be implemented immediately.

   (b) Medical Programme: 1000 units can be requested for a medical programme. If this programme is implemented it will reduce the risk of malnutrition and disease by 25%. However if the village is willing to contribute another 1000 units, the risk can be reduced by 50%. If a grant is made, this programme can become effective in the following year.

   (c) Agricultural Programme: An application can be made for three wells costing 500 units each. If a grant is made, the wells can be sunk by the year after the grant is received. A successful well irrigates three fields, and paddy can be sown. Each field of paddy will normally yield 150 per year irrespective of the monsoon. However not all well are successful.

..2

Alternatively an application can be made for three pumpsets costing 300 units each. If a grant is made these can be installed immediately. With a successful well and a pumpset, five fields can be irrigated.

BASELINE SURVEY

1	2	3	4	5	6	7	8			11						12				13
Date	Serial No.	House No.	Name of Head of Family	Total No. of members	Married women 15-45 with husbands alive	No. of pregnant women	Family Planning acceptance	No. of children		Immunization Received						Death in last 1 year				REMARKS
								9	10	D P T			P O L I O							
								0-1 yr	1-5 yrs	1	2	3	1	2	3	0-1 yr. (12a)	1-5 yrs. (12b)	Maternal (12c)	Others (12d)	

Voluntary Health Association of India

C-14, Community Centre,
Safdarjung Development Area
New Delhi-110016

Telegrams : VOLHEALTH
New Delhi-110016
Telephones : 668071
668072

BASE LINE SURVEY

In the process of selecting our target area and then the specific villages in which we will work, we would have found that the people of each village live with a number of problems. As a team of health workers, we have to find out which of these problems are more important to the community. A good way to find out thic information is by conducting a baseline survey. Such a survey helps us to determine the initial health status of a population.

What is a baseline survey?

A survey is a systematic way of collecting information about the community. The baseline survey is done before we start a comprehensive Community Health Programme. Because this survey gives data about the health status of people before the programme is started it is called a baseline survey. The baseline survey is done ONLY ONCE.

The baseline survey can help us in:

1. assessing the health needs of a community
2. enabling local leaders to become more aware of the health conditions in their community
3. increasing the community's awareness of the health problems facing them
4. setting objectives for a comprehensive community health programme with the community
5. identifying the 'At Risk' population (that needs special care)
6. evaluating achievements and draw backs of the programme and resetting priorities at a later stage.

When to do a baseline survey?

We should do the baseline survey

A. AFTER WE HAVE

1. selected the villages we want to work in
2. intensified visits to these villages

also

B. AFTER THE COMMUNITY

1. has had time to understand our motives
2. has realised the need for a community health programme
3. has understood the concept of community involvement
4. has understood why we want to do a survey and know how we will use the information collected.

When the staff of a health centre does a survey before they know the community and the community knows them, people misunderstand the purpose of the survey. The people may resist and give false information, distrust the staff, and ill feelings on both sides can be generated. The staff may even decide to discontinue work in the village. It is therefore very important that the community be well prepared before doing the survey.

...,..2/

Who does the survey?

We are likely to get more accurate information if we ask members of the community to do the survey. Help of the following groups or individuals can be taken:

1. School teachers
2. Members of local youth clubs, Farmers' Clubs, Mahila Mandals - etc.
3. Local leaders both formal and informal
4. The village health worker (if the community has already chosen one)
5. Any interested member of the community

It is important that the people chosen to do the survey have a good relationship with a majority of the people.

What information do we collect?

The health status of a community is reflected in the health of the mother and child, as these are two of the most vulnerable groups in the community. Therefore to begin with we collect information about these groups. If we want to start a specialized programme such as programme for leprosy control, TB control, etc., data can be collected for these purposes also.

How to record the data?

We can use a note book or register for this purpose. You can record the baseline data in the first pages of this register. A sample table giving the information to be recorded is attached at the end of this paper. (Table I).

The information for each family should be entered under each of the headings.

Some Definitions:

House Number is the same as Malaria Survelliance House Number.

Family is a group of people

- who are blood relatives;
- living under the same roof;
- and sharing the same kitchen.

If the people are living in the same house, but have 2 kitchens, they are considered as two separate families. In this case, it should be recorded as follows:

S. No.	H. No.	Head of Family
4	15	Ganesh Chand
5	15	Babulal

.....3/

Head of Family - The person who takes all major decisions in the family. (If in a family the son earns but the father takes the decisions, the father is still considered head of the family)

How to use the data collected?

1. Total all the columns at the end of each page. Then make a grand total for each column so that you have the total figures for the village.

Total of column	2	= Total number of households
Total of column	5	= Total population of village
Total of column	6	= Total number of married women in the reproductive age group
Total of column	7	= Total number of pregnant women at the time of the survey
Total of column	9	= Total number of children 0-1 years (Total number of births in the last year)
Total of column	10	= Total number of children 1-5 years
Total of column	9+10	= Total number of under fives
Total of column	11	= Number of children already immunized
Total of column	12(a)	= Total number of deaths in children between 0-1 year in the last year (infant mortality)
Total of column	12(b)	= Total number of deaths in children between 1-5 years
"	" 12(a) + 12(b)	= Total number of deaths in children between 0-5 years
Total of column	12(c)	= Total number of maternal deaths
"	12(a)+(b)+(c)+(d)	= Total number of deaths in the village

Guidelines for checking if the collected information is correct:

If our results differ greatly from the average figures given below, it is because:

either the figures do not tell the whole story which may be due to

- unsupervised work
- faulty addition of the figures
- faulty questions used
- Harijan quarters or some other part of the village not visited
- small village, chance variation from the average

or the village is much different from the average which may be due to

- progressive village or block, district or state
- previous health work done in the area
- some other cause

.....4/

Average figures for a population of 1000:

1.	Number of houses	- 125 to 200
2.	Number of women in the reproductive age (15 - 45 years)	- 200 (15 - 20% of the population)
3.	Number of children between the ages of 0-5 years	- 150 (15% of the population) This figure may be higher in areas where nutrition is good or family planning services are poor. This figure may be lower in areas where veneral disease (which causes sterility) is high, or where there is poor nutrition.
4.	Number of malnourished children between the age of 0-5 years	- 90 to 120 (60 to 80% of under-five population)
5.	Number of children born per year	- 30 to 40
6.	Number of pregnant mothers in one year	- 45 to 60 (1½ times the number of births in the village)
7.	Number of obviously pregnant mothers at any one time in a village (after 6 months of pregnancy)	- 10 to 13 (1/3 of the number of births in the village)
8.	Cases of tuberculosis:	
	a. Number of people with sputum positive tuberculosis	- 2 to 8
	b. Number of people with sputum negative tuberculosis	- 11 to 17
9.	Number of people with leprosy	- This may vary from 0 to 25 or even more.

How to set priorities on the basis of baseline data?

Eg. 1. If there is a high infant mortality due to diarrhoea, then the priorities would be:

a) health education of mothers on the importance of rehydration drink;
b) to improve the drinking water supply of the village.

Eg. 2. If 90% of the married women are in the reproductive age (15 years to menopause) and the average number of children per family is four, family planning programme should be a priority.

It is important to discuss the findings of the survey with the community before any definite strategies are planned. Programmes planned with the community have a greater chance of success.

Xx

chtt:pt:25.6.'81

C-9/244(c)
m:13.12.82

Prepared by
Community Health Team
Voluntary Health Association of India
Community Centre, S.D.A.
New Delhi-110 016.

EVALUATION OF A PROGRAMME

S E C T I O N I

Evaluation is a process by which the outcome (result) of an activity is judged. By judging the outcome we can decide whether the activity should be continued, modified or stopped. Therefore evaluation is a tool that helps us to work in a better way. For evaluation to be of use we must have an open mind to be critical about our own work. We must also be willing to learn from past mistakes.

When to think of evaluation

Evaluation of a programme is a continuous process. It begins as we are making our plans. This is to help us to be sure that activities we plan are related to the needs we want to meet. We will need to evaluate at regular intervals during the implementation of the programme to see if we are going in the right direction or need to make any change. At the end of an activity we will want to evaluate to know if we have reached the desired result.

I - EVALUATION WHEN PLANNING A PROGRAMME

When we plan any activity we usually have some idea as to what we hope to achieve through this activity. Very often the idea may be as vague as "We want to improve the health of the people". This statement is too general and is difficult to evaluate. A better way is to state in more specific terms how we are going to improve the health status and how we are going to measure this improvement in the health status. For example, we all know that infant mortality rate (IMR)* is very high in our country. Our country cannot be called healthy unless we reduce the IMR. In other words a reduction in IMR shows (indicates) an improvement in the health status of the population. Measuring the reduction in IMR automatically means a measurement of health status. Infant mortality rate is therefore called a health indicator. Other examples of health indicators are maternal mortality rate and morbidity rate.

From the above it is clear that if we want to evaluate our programme we will have to be clear at the time of planning

- what we hope to achieve through the activity
- how we are going to meansure the achievement.

Going back to our example of IMR, we all know that more children die in families with poor income. So when we say that we want to reduce IMR we are indirectly saying that we will focus our attention on the infants who come from poor families. The infants from poor families are now our target group.

If we do not ask ourselves the right questions at the time of planning, we are bound to meet problems at a later stage. While planning a programme the following questions should be kept in mind.

- Is the proposed programme directed to an important problem of the community ?
- Is this problem a real priority with the people ?
- How much of the problem does the programme plan to solve ?
- How effective do we expect the planned activities to be in solving the problem ?

---

* Infant Mortality Rate is the number of deaths in children below one year of age per 1000 live births.

- What desirable and undesirable side effects can be anticipated ?

- How are we going to involve the village people in the activities ?

- How much will the programme cost to achieve the results ?

- Who is going to meet the cost of the programme ?

Good planning helps in the evaluation of the programme.

II - EVALUATION DURING THE IMPLEMENTATION OF THE PROGRAMME

Here, we are trying to judge the outcome (result) of an activity. Depending on the activity we could evaluate it at frequent intervals during the activity and also once at the end of the activity.

What Do We Want to Evaluate

A- Effectiveness of the services:

In order to measure the effectiveness of the services it is necessary to measure the extent to which people get the services that were planned to meet their needs. We would also have to decide whether the services have been of real benefit.

For example, in our village we may have found that the incidence of whooping cought is very high. We may have decided to immunize all the under five children with DPT. After one year of the programme we want to evaluate the effectiveness. For this we would have to find :

- the total number of under five children who received all the 3 doses of DPT at the correct interval

- the total number of under five children in the village.

On the basis of this, we can calculate the percentage coverage.

$$\text{Percentage coverage of DPT} = \frac{\text{Total number of Under Five immunized in village}}{\text{Total number of U.F. in village}} \times 100$$

This gives us an indication as to how effective our coverage is, i.e. the total percentage of children receiving the 3 doses of DPT at the correct interval.

But our immunization programme can be said to be of benefit only if we are able to show that it has significantly reduced the incidence of whooping cough in the area. To find out this we would have to know :

- how many cases of whooping cough were there in the year before the immunization programme ?

- how many cases there were in the year following the immunization programme ?

Supposing we have immunized at least 90% of the under five children in the project area with DPT but the incidence of whooping cough has not come down, we would then have to find out -

- whether the time interval between doses was correct ?

- whether all the 3 doses were given ?

- was the vaccine kept under the necessary conditions ?

B- The process by which the result was achieved;

The main thrust in a Community Health Programme is to organize the community to make a collective effort towards improving the health status. The same result can be achieved in different ways. But each way will be qualitatively different.

For example, in village A, there is lack of clean drinking water. Due to this lack of clean drinking water there are many cases of diarrhoea. Now this village needs a tube well. There are many ways in which the village can get a tube well.

- the health team can apply to a funding agency for money and dig the well;
- the village people can write up a petition to the BDO for a tube-well;
- the village people can contribute part of the expenses (either cash or labour) to supplement the cost;
- the village people could wait for 2000 AD (when there will be health for all).

Applying to a funding agency is an easier way. It doesnot involve much decision making or involvement at the community level. The health team assesses the need of the village, writes to a funding agency and gets the well dug. In this process the village people are merely passive on-lookers.

In the second method, the writing up of a petition or sending a delegation to the BDO will need the involvement of the village people. Many meetings will have to be called, the people will have to decide on many issues (who should go, who should write the application, what is the next step or action if BDO is not forthcoming). Going to the BDO also means the beginning of an initiative, a realization of their strength. The process of dealing with the Government structure collectively might itself become a great educational process. Probably the time taken for thewell to be dug will be much longer than in the earlier case but the emergence of an organized group of people would have been worth it.

When we want to evaluate the process by which a result was achieved the following questions should be kept in mind :

- Were the village people involved in any decision making related to planning and implementation of the programme ?
- How many of the village people were involved in this decision making and which group did they belong to ?
- What was the process of decision making ?
- Did the activity result in the emergence of an organized action in the village ?
- Has the process of decision making followed in this activity set an example for future activities ?

C- Equity:

Equity should be a primary focus of all health programme. So, the question is not merely has health improved, but has it improved for the poorest section of the village ? How many of the most disadvantagod group are covered by the programme ? How many of their children are ummunized ?

In Pushpa Health Centre, the daily OPD attendance was 60. Patients came from far and wide and the dispensary was making good income. But an analysis of the OP records for one year showed that 70% of the patients came from outside the target area and belonged to the richer section. The dispensary staff were spending 70% of their time on rich people. The question before the staff was :

- Should they continue to spend so much time for the rich people ? Or

- Should they work in a different way so that the poor people (who form 80% of the population) make better use of the services ?

D- Changes in behavioural patterns:

Many community health programmes spend more time collecting numerical facts like the number of children immunized, the number of tube wells dug, the number of mothers who got tetanus toxoid etc. While numerical data is important, they are not necessarily the true indicators of change in a community. It is more important to assess attitudes and changes in behaviour in the community. For example, if a V.H.W. has convinced a mother that her relatively healthy looking child is becoming undernourished when he fails to gain weight, or if a traditional birth attendant (dai) has started sending pregnant mothers for antenatal checkups, great strides have been made towards changing the health status in a community. We must remember that knowledge alone does not change attitudes and practices.

E- Functioning of the health team:

A health team is a group of people working together to make health care possible in a community. The members of a health team include all those working together. For example, the supporting staff - a clerk, a driver, a cleaner - are all part of the team. It is important that their work and help they give be recognized as well as that of the medical assistants, nurses and community workers.

People work well together when they agree with one another.

i. Do all the members in the team know and understand the objectives of the organization ? (People who do not know what those objectives are may waste a lot of time in other activities. People who don't agree with the objectives may obstruct the work of the organization).

ii. Are the members involved in planning and carrying out the programmes ?

iii. Are the members involved in decision making related to the major issues (the direction the work should take, what activities must be done) ?

iv. Is work shared by all ? Does each person have specific work to do?

v. Are these responsibilities divided in the best way ?

vi. How are the member and their work supervised ? Does supervision take the form of support or is it done in an autocratic way ? (i.e. do what you are told and don't ask questions).

vii. Is each person in the team treated with respect or is respect given only to those in the decision making position (e.g. Doctor)

viii. Is there effort to meet regularly to evaluate the work and to get feedback. Are the minutes of the meeting recorded ?

ix. How are inter-personal conflicts resolved in the team ? How are the personal problems of staff solved ? How are disputes prevented or settled ?

x. What is the salary structure in the organization ? Are the disparities too great ?

xi. Does the health team continuously upgrade its knowledge and skills ? It is also important for each team member to evaluate his own and other team members' work. (Are the work objectives being met, what the quality of output, initiative, ingenuity, enthusiasm shown in the job ?)

F- Functioning of team with the village people:

- What do the village people feel about the health team ?

- Does the community trust and act on the advice received from the health team ?

-Do the village people know and understand the reason behind the work of the health team ?

- At what stages of the programme are the village people involved ?

- What is the attitude of the health team towards the village people ?

- Is there effort on the part of the health team to develop leadership other than the formal one already in the village ?

- How are messages communicated from the health team to the village and vice versa ?

- Is the working schedule more to suit the convenience of the village people or to suit the convenience of the team ?

- What is the process by which the village people are involved in decision making ?

- How many village meetings have been conducted, what was the purpose, what were the decisions taken, how were they carried out and what was the role of the health team ? Are minutes recorded ?

These are some of the questions which the health team should ask themselves. There may be more specific questions related to each of the activities, that are being implemented (e.g. Under Five Programme, VHW Programme, Feeding Programme etc.)

G- Cost of the Programme:

- What is the total cost of the programme ?

-Where does the money come from ?

- What kind of resources are used from community (labour, cash buildings) ?

- Are government resources being used (those available from the DHO, BDO, etc)

- Has the dependency on outside funds decreased over the years ?

It is important for the health team to find out if the cost of the programme was justified in view of its results. As resources are limited we must be careful to use them in a way that would benefit the greatest number of people.

Two nurses decided to have a Community Health Programme which was to cover 6 villages with a total population of 5000. The objectives of the programme were worked out with the people of the village where the Nurses intended to start their programme. The total cost (recurring cost) was estimated as Rs. 30,600/- per year for the 5000 people. This cost would cover the salaries of the two nurses, the doctor's salary while he would visit the villages, the stipends of 6 VHWs and the maintenance of a vehicle.

The nurses started their work in the first village which had an average of 800 people. They got so much involved in that village that they never went to the other 5 villages which should have been part of the programme.

At the end of three years the programme was evaluated. The result of the work was very positive; all children had been vaccinated and had received Vitamin A treatment, the dais had been trained the village had chosen three Village Health Workers, the VHWs had been trained by the Nurses and the village promised to pay them once their training was completed, and did it at the rate of Rs. 30/- per VHW per month. So all seemed perfect.

But then, when evaluating the cost of the programme it was realised that it had cost about Rs. 40/- per person per year (an average of Rs. 200/- per family per year) to insure a minimal health service in this village.

Considering the very limited financial resources available in India can we expect the people to be able to meet the cost of such a programme ?

The two questions that the health team should ask are :

- Could the same resources achieve better results ?

- Could the same results be achieved with less resources ?

H- Unforeseen side effects:

Side effects are generally unforeseen and can be good or bad. For example, a food for work programme was organizedin a village. The The programme included the digging of wells for irrigation purpose. The wells dug were good and thus land owners benefitted much from this programme. It was now possible for the big land owners to have two crops in a year. Unfortunately the majority of the village people who had no land were unable to make use of this programme. The poor people in the village developed a feeling of hatred towards the health team and the health team could no longer work with the poor people. In this case, the side effect of the programme was bad.

In another village, the leaders chose a low caste woman to be the VHW, because they considered the tasks performed by a V.H.W. as "dirthy". The health team was not happy with their choice because she was illiterate. After one year the health team realized that the VHW was able to bring about a considerable change in the low caste population of the village which also was the poorest section in that village. Since the objective of the health team was to reach out to the poor people, this was achieved.

In this case the side effect of the programme was good.

III - WHAT DO WE REQUIRE TO BE ABLE TO EVALUATE OUR WORK

A- Knowledge of the area before the programme was started:

i. Knowledge regarding health situation - birth rate, infant mortality rate, morbidity rates etc. This information can easily be obtained from the PHC, DHO.

ii. Knowledge about the facilities available in the area

iii. Knowledge about socio-economic status, cultural beliefs, etc.

It may not be possible to know everything about the area. Some information is required before we start and more can be collected informally as we work.

B- Baseline data and records:

We have described the collection and usefulness of baseline data in a previous handout. This data is important as we can not only plan our services but also evaluate our work. As explained in another handout, records maintained for ongoing programme are also necessary for evaluating our work.

C- A well planned programme:

If we ask ourselves the right questions as stated in the beginning part of this paper, it will be clear to us where we want to go. What we want to achieve through our programme and activities will also be clearer.

D- Village diary:

This is a record of the events as we observe during our village visits. This also contains a report of the various village meetings held and decisions taken. This is a useful way of finding out if there has been any change in the attitude of the village people towards us, whether there has been any changes in some of the cultural practices, etc. These attitudes are hard to assess in statistical terms but they are much more important than statistical data.

E- Minutes of the team meeting, records of tasks each member is supposed to do.

F- Open-mindedness:

Finally we need to be open enough to look at our work critically and objectively. If an activity we have put our heart and soul in, does not turn out to be of much value, we should be able to accept it, learn from the failure and change our direction if necessary.

IV - TO SUMMARIZE

The purpose of an evaluation is to find out if

- the activities of the programme are meeting the most important needs of the people
- the activities are satisfactorily meeting the needs
- the people of the community are involved in the programme
- there has been any unforeseen harmful side effect
- the result justifies the cost.

Answers to these questions will help us to decide if our programme has been of value and whether we should continue, modify or change the activities.

S E C T I O N II

So far, we have discussed the methodology of evaluating a community health programme. Three basic issues, however, still remain to be examined. We shall discuss these one by one.

I - THE ROLE OF AN EXTERNAL EVALUATOR

It is unfortunate that normally evaluation is associated with an outside evaluator and many C H. programmes wait for an outside "expert" to evaluate their work. It is the function and responsibility of each member of the team to evaluate his/her work and the team's work.

Ideally in Community Health the evaluation must be carried out by the team members along with the people of the village. Since they have been involved right from the beginning they would be in a better position to say if some of the attitudes and practices have changed over the time period. Evaluation should be built into on-going management of a C.H. programme.

Evaluation carried out by outside experts is a particularly threatening situation and explains much of the resistance to evaluation. The word "evaluation" itself has come to be very emotional for many people, as are words like "police". But if it becomes a management tool controlled by those involved, this threat is removed.

This does not mean that there is no role for external evaluation. Fresh and possibly, more objective insights, brought in by external evaluators, can be useful, provided there is a viable mechanism for feedbak into the decision-making process. Lack of such feedback is usually the main problem in external evaluations.

II - OBJECTIVITY

There is an assumption that evaluation must be scientifically objective. Such an assumption implies a lack of involvement in and commitment to a programme. But being part of a programme is not only compatible with objectivity but it is essential for a sympathetic understanding of the objectives and problems of the programme.

Furthermore, it is increasingly clear that there is no such thing as objective evaluation. Objectivity tends to be defined within the limits of the priorities and perceptions of the evaluators. Decisions about the information to be collected, choice of samples, selection of criteria, relative weighting, methods of statistical treatment and presentation of results all involve value judgements which need to be stated clearly.

There is another trend in evaluation in the health field; a tendency to reject information which is not in the form of hard statistical data. Some of the most important aspects of a programme may not be measurable. In the words or one social scientist, "Truth in the field of human affairs is better approximated by statements that are rich with a sense of human encounter". Too rigid an evaluation framework may turn out to be mistaken. Evaluation can yield new questions as it is carried out provided investigators have an open mind. A sense of open inquiry and a willingness to learn must be encouraged.

III - EVALUATION FOR WHOM

In considering an evaluation, very important questions are : Who is the evaluation for ? Whose questions will be answered ? Are they those of the external funding agency ? The programme managers or top level planners ? The health workers involved at the intermediate and field levels ? The beneficiaries themselves ? Which beneficiaris ? The poor ?

The women ? All these groups have a right to ask questions. There may be overlapping interests, but the questions each group considers important are likely to differ. The emphasis today on a participatory approach to evaluation recognizes that investigators and their subjects perceive different realities. It is arrogant, exploitative and counter-productive for researchers, funding agencies or health planners alone to determine what should be investigated. All have their biases and value systems. Some would argue that if different groups have such conflicting interests, then agreement among professionals, managers and consumers is unlikely in the real world. When resources are scarce, there is likely to be considerable conflict on how they should be used. Much depends on who defined the health needs, but no voice, such as women. This conflict is one reason why objectives and targets are so often ill-defined. Hidden conflicts are manageable if they remain vague, incoherent and mystified. To sharpen them would be to expose these conflicting interests. While agreement is a goal, it should be recognized that different people have different perceptions of need and objectives. Those concerned about evaluation must be sensitive to different groups, particularly those who have few means to tell their needs.

The people themselves will want to ask many questions. Are they getting what they think they need from this health programme ? What do they really need ? Has anything improved for them ? Do less children die each year ? Are there less poor people in their community ? How is sickness contributing to their poverty ? What can they themselves do to change the situation ? How can they get more power to influence the decisions about getting public resources ? Priorities regarding the various interests served by the evaluation must be known at the beginning. Evaluation for whom ? Whose indicators ? Whose objectives ?

Note: This paper has been prepared keeping in mind the requirements for a small community health programme. We have therefore not gone into the question of selecting control population, samples, etc. We have also not talked about how to use rates as indicators of change as it is not applicable to a small population.

*** *** ***

Acknowledgements:

1. "International Health and Measuring Progress" Proceedings, 1980 International Health Conference, June 11-13, 1980. Published by the National Council for International Health, Washington.

2. "On Being In Charge" - A guide for Middle Level Management in Primary Health Care: by McMohan, Barton & Piot : Published by WHO, Geneva.

HEALTH STATUS IN THE CONTEXT OF INDIAN SOCIETY

(Formator Seminar : 11 - 12 Dec. 1983)

I Major features of the system of health care services

1. Ignoring the indigenous belief systems, life-styles and health care institutions and practices which formed an organic unity and the introduction of the western system of medicine in toto.

2. Urban-biased, top-down (trickle down theory) and elite-oriented approach of the British period still continues to dominate the health services. The bulk of the expenditure on these services is still incurred in urban centres, their benefits largely in favour of upper and middle classes. They still fail to reach the periphery i.e. the poor and outlying villages.

3. The overwhelming curative orientation of the health services still continues to dominate to the neglect of promotive and preventive programmes.

4. Most of the 6000 hospitals and 450,000 beds are in towns and cities and consume substantial proportion of the funds available.

5. The system is highly centralized and bureaucratized so that it is not able to cope with problems of distance nor to organize good referral services.

6. The system depends too much on doctors who lack the right type of training and orientation and are not willing to work in rural areas.

7. The system is highly medicalised. Injections and drugs are becoming status symbols of a consumer society.

8. The cultural alienation of the medical profession has led to over-sophistication and mystification.

9. The over-production of drugs and doctors has created a vested interest in the continuance or expansion of ill-health.

10. There is no involvement of the community.

11. The roles of the private and the public sector are not clear and the overwhelming profit motive of the private sector both medical and pharmaceutical vitiates the entire medical system.

12. In brief after independence we have followed a linear expansion of the medical system initiated by the British to suit their colonial interests. Efforts at improving training, organisation and administration of this system cannot bear fruits. The meagre results obtained during the past 36 years point to the futility and wastefulness of continuing in the same direction. The basic principles and approaches are to be questioned and alternatives appropriate to the life and needs of the people are to be thought of creatively and a new model of health care services has to be created.

Ashirvad A/5

II. Basic Principles and Approaches of the Alternative Model

1. The urban biased, centralized, bureaucratic, over-professionalized top-down approach should be abandoned and health care services should strongly be based in the community so that people could be intensively involved in planning and implementing programmes for their own health care.

2. Most of the problems (preventive, promotive and simple curative health problems) must be taken care of by the community itself and more than half of the expenditure on health services should be incurred within this community. From here health services should rise to the top (referral, specialised and super-specialised services at the district, state and national levels.)

3. Health volunteers from the community (CHV) can effectively undertake many functions done by paramedical and even medical personnel.

4. Out of the per capita expenditure of Rs.30/-, Rs.19/- will be spent within the community, so that the community becomes the heart of the system and not its periphery.

5. Over-emphasis on large hospitals (high cost-low efficiency) to be done away with by establishing a small community hospital of about 30 beds in every community of 100,000 people. 'General specialists' could tackle most of the health problems. The present Primary Health Centres (PHC) lack the facilities of a hospital and so are under-utilized. So they are no substitute for the efficient community hospital.

6. Promotive, preventive and curative functions be integrated at all levels of the alternative system (District, CHC, sub-caste and village centre)

7. Redefine the role of the doctor and drugs in this new model.

8. A model in which people will be considered as subjects of health and would be democratic, decentralised and participatory i.e. people will be in charge at different levels to manage health care services. It implies that the people will have the political right to control them effectively(i.e. financial and administrative control)

9. Give a national orientation by critically incorporating the culture and traditions of the people as well as the positive elements in other cultures into our system of health care.

10. Provide adequate support to the different systems of indigenous medicine. Make use of the 300,000 registered practitioners of the indigenous systems and probably an equal number of non-registered practitioners in the development of the national health care system.

11. All medical colleges should have courses in other systems so that an integrated multi-system care be provided and a national system emerge on the long run.

12. Adopt an economical model, yet spend liberally so that the goal of health for all be realised by 2000 A.D.

III. Recommendations of the Committee on 'Health for All: An Alternative Strategy'

We therefore make the following recommendations:

1. The Government of India should, in consultation with all concerned, formulate a comprehensive national policy on health dealing with all its dimensions, viz., philosophical and cultural, socio-economic, nutritional, environmental, educational, preventive and curative. The coordinated and planned implementation of this policy should be the collaborative and cooperative responsibility of individuals, families, local communities, health personnel and State and Central Governments.

2. The basic objectives of this policy should be

   a) to integrate the development of the health system with the overall plans of socio-economic-political transformation;

   b) to ensure that each individual has access to adequate food and is provided with an environment which is conducive to health and adequate immunization, where necessary;

   c) to devise an educational programme which will ensure that every individual has the essential knowledge, skills and values which would enable him to lead an effectively healthy life and to participate meaningfully in understanding and solving the health problems of the family and the community.

   d) to replace the existing model of health care services by an alternative new model which will be

   -combining the best elements in the tradition and culture of the people with modern science and technology,

   -integrating promotive, preventive and curative functions,

   -democratic, decentralised and participatory,

   -oriented to the people, i.e. providing adequate health care to every individual and taking special care of the vulnerable groups,

   -economical, and

   -firmly rooted in the community and aiming at involving the people in the provision of the services they need and increasing their capacity to solve their own problems, and

   e) to train the personnel, to produce drugs and materials and to organise research needed for this alternative health care system.

3. A detailed time-bound programme should be prepared, the needed administrative machinery created and finance provided on a priority basis so that this new policy will be fully implemented and the goal of "Health for All" be reached by the end of the century.

HEALTH STATUS IN THE CONTEXT OF INDIAN SOCIETY

(Formator. Seminar : 11 - 12 Dec. 1983)

I Major features of the system of health care services

1. Ignoring the indigenous belief systems, life-styles and health care institutions and practices which formed an organic unity and the introduction of the western system of medicine in toto.

2. Urban-biased, top-down (trickle down theory) and elite-oriented approach of the British period still continues to dominate the health services. The bulk of the expenditure on these services is still incurred in urban centres, their benefits largely in favour of upper and middle classes. They still fail to reach the periphery i.e. the poor and outlying villages.

3. The overwhelming curative orientation of the health services still continues to dominate to the neglect of promotive and preventive programmes.

4. Most of the 6000 hospitals and 450,000 beds are in towns and cities and consume substantial proportion of the funds available.

5. The system is highly centralized and bureaucratized so that it is not able to cope with problems of distance nor to organize good referral services.

6. The system depends too much on doctors who lack the right type of training and orientation and are not willing to work in rural areas.

7. The system is highly medicalised. Injections and drugs are becoming status symbols of a consumer society.

8. The cultural alienation of the medical profession has led to over-sophistication and mystification.

9. The over-production of drugs and doctors has created a vested interest in the continuance or expansion of ill-health.

10. There is no involvement of the community.

11. The roles of the private and the public sector are not clear and the overwhelming profit motive of the private sector both medical and pharmaceutical vitiates the entire medical system.

12. In brief after independence we have followed a linear expansion of the medical system initiated by the British to suit their colonial interests. Efforts at improving training, organisation and administration of this system cannot bear fruits. The meagre results obtained during the past 36 years point to the futility and wastefulness of continuing in the same direction. The basic principles and approaches are to be questioned and alternatives appropriate to the life and needs of the people are to be thought of creatively and a new model of health care services has to be created.

II. Basic Principles and Approaches of the Alternative Model

1. The urban biased, centralized, bureaucratic, over-professionalized top-down approach should be abandoned and health care services should strongly be based in the community so that people could be intensively involved in planning and implementing programmes for their own health care.

2. Most of the problems (preventive, promotive and simple curative health problems) must be taken care of by the community itself and more than half of the expenditure on health services should be incurred within this community. From here health services should rise to the top (referral, specialised and super-specialised services at the district, state and national levels.)

3. Health volunteers from the community (CHV) can effectively undertake many functions done by paramedical and even medical personnel.

4. Out of the per capita expenditure of Rs.30/-, Rs.19/- will be spent within the community, so that the community becomes the heart of the system and not its periphery.

5. Over-emphasis on large hospitals (high cost-low efficiency) to be done away with by establishing a small community hospital of about 30 beds in every community of 100,000 people. 'General specialists' could tackle most of the health problems. The present Primary Health Centres (PHC) lack the facilities of a hospital and so are under-utilized. So they are no substitute for the efficient community hospital.

6. Promotive, preventive and curative functions be integrated at all levels of the alternative system (District, CHC, sub-caste and village centre)

7. Redefine the role of the doctor and drugs in this new model.

8. A model in which people will be considered as subjects of health and would be democratic, decentralised and participatory i.e. people will be in charge at different levels to manage health care services. It implies that the people will have the political right to control them effectively(i.e. financial and administrative control)

9. Give a national orientation by critically incorporating the culture and traditions of the people as well as the positive elements in other cultures into our system of health care.

10. Provide adequate support to the different systems of indigenous medicine. Make use of the 300,000 registered practitioners of the indigenous systems and probably an equal number of non-registered practitioners in the development of the national health care system.

11. All medical colleges should have courses in other systems so that an integrated multi-system care be provided and a national system emerge on the long run.

12. Adopt an economical model, yet spend liberally so that the goal of health for all be realised by 2000 A.D.

III. Recommendations of the Committee on 'Health for All: An Alternative Strategy'

We therefore make the following recommendations:

1. The Government of India should, in consultation with all concerned, formulate a comprehensive national policy on health dealing with all its dimensions, viz., philosophical and cultural, socio-economic, nutritional, environmental, educational, preventive and curative. The coordinated and planned implementation of this policy should be the collaborative and cooperative responsibility of individuals, families, local communities, health personnel and State and Central Governments.

2. The basic objectives of this policy should be

   a) to integrate the development of the health system with the overall plans of socio-economic-political transformation;

   b) to ensure that each individual has access to adequate food and is provided with an environment which is conducive to health and adequate immunization, where necessary;

   c) to devise an educational programme which will ensure that every individual has the essential knowledge, skills and values which would enable him to lead an effectively healthy life and to participate meaningfully in understanding and solving the health problems of the family and the community.

   d) to replace the existing model of health care services by an alternative new model which will be

   -combining the best elements in the tradition and culture of the people with modern science and technology,

   -integrating promotive, preventive and curative functions,

   -democratic, decentralised and participatory,

   -oriented to the people, i.e. providing adequate health care to every individual and taking special care of the vulnerable groups,

   -economical, and

   -firmly rooted in the community and aiming at involving the people in the provision of the services they need and increasing their capacity to solve their own problems, and

   e) to train the personnel, to produce drugs and materials and to organise research needed for this alternative health care system.

3. A detailed time-bound programme should be prepared, the needed administrative machinery created and finance provided on a priority basis so that this new policy will be fully implemented and the goal of "Health for All" be reached by the end of the century.

HEALTH STATUS IN THE CONTEXT OF INDIAN SOCIETY

(Formator. Seminar : 11 - 12 Dec. 1983)

I Major features of the system of health care services

1. Ignoring the indigenous belief systems, life-styles and health care institutions and practices which formed an organic unity and the introduction of the western system of medicine in toto.

2. Urban-biased, top-down (trickle down theory) and elite-oriented approach of the British period still continues to dominate the health services. The bulk of the expenditure on these services is still incurred in urban centres, their benefits largely in favour of upper and middle classes. They still fail to reach the periphery i.e. the poor and outlying villages.

3. The overwhelming curative orientation of the health services still continues to dominate to the neglect of promotive and preventive programmes.

4. Most of the 6000 hospitals and 450,000 beds are in towns and cities and consume substantial proportion of the funds available.

5. The system is highly centralized and bureaucratized so that it is not able to cope with problems of distance nor to organize good referral services.

6. The system depends too much on doctors who lack the right type of training and orientation and are not willing to work in rural areas.

7. The system is highly medicalised. Injections and drugs are becoming status symbols of a consumer society.

8. The cultural alienation of the medical profession has led to over-sophistication and mystification.

9. The over-production of drugs and doctors has created a vested interest in the continuance or expansion of ill-health.

10. There is no involvement of the community.

11. The roles of the private and the public sector are not clear and the overwhelming profit motive of the private sector both medical and pharmaceutical vitiates the entire medical system.

12. In brief after independence we have followed a linear expansion of the medical system initiated by the British to suit their colonial interests. Efforts at improving training, organisation and administration of this system cannot bear fruits. The meagre results obtained during the past 36 years point to the futility and wastefulness of continuing in the same direction. The basic principles and approaches are to be questioned and alternatives appropriate to the life and needs of the people are to be thought of creatively and a new model of health care services has to be created.

Ashirvad A/5

II. Basic Principles and Approaches of the Alternative Model

1. The urban biased, centralized, bureaucratic, over-professionalized top-down approach should be abandoned and health care services should strongly be based in the community so that people could be intensively involved in planning and implementing programmes for their own health care.

2. Most of the problems (preventive, promotive and simple curative health problems) must be taken care of by the community itself and more than half of the expenditure on health services should be incurred within this community. From here health services should rise to the top (referral, specialised and super-specialised services at the district, state and national levels.)

3. Health volunteers from the community (CHV) can effectively undertake many functions done by paramedical and even medical personnel.

4. Out of the per capita expenditure of Rs.30/-, Rs.19/- will be spent within the community, so that the community becomes the heart of the system and not its periphery.

5. Over-emphasis on large hospitals (high cost-low efficiency) to be done away with by establishing a small community hospital of about 30 beds in every community of 100,000 people. 'General specialists' could tackle most of the health problems. The present Primary Health Centres (PHC) lack the facilities of a hospital and so are under-utilized. So they are no substitute for the efficient community hospital.

6. Promotive, preventive and curative functions be integrated at all levels of the alternative system (District, CHC, sub-caste and village centre)

7. Redefine the role of the doctor and drugs in this new model.

8. A model in which people will be considered as subjects of health and would be democratic, decentralised and participatory i.e. people will be in charge at different levels to manage health care services. It implies that the people will have the political right to control them effectively(i.e. financial and administrative control)

9. Give a national orientation by critically incorporating the culture and traditions of the people as well as the positive elements in other cultures into our system of health care.

10. Provide adequate support to the different systems of indigenous medicine. Make use of the 300,000 registered practitioners of the indigenous systems and probably an equal number of non-registered practitioners in the development of the national health care system.

11. All medical colleges should have courses in other systems so that an integrated multi-system care be provided and a national system emerge on the long run.

12. Adopt an economical model, yet spend liberally so that the goal of health for all be realised by 2000 A.D.

III. Recommendations of the Committee on 'Health for All: An Alternative Strategy'

We therefore make the following recommendations:

1. The Government of India should, in consultation with all concerned, formulate a comprehensive national policy on health dealing with all its dimensions, viz., philosophical and cultural, socio-economic, nutritional, environmental, educational, preventive and curative. The coordinated and planned implementation of this policy should be the collaborative and cooperative responsibility of individuals, families, local communities, health personnel and State and Central Governments.

2. The basic objectives of this policy should be

   a) to integrate the development of the health system with the overall plans of socio-economic-political transformation;

   b) to ensure that each individual has access to adequate food and is provided with an environment which is conducive to health and adequate immunization, where necessary;

   c) to devise an educational programme which will ensure that every individual has the essential knowledge, skills and values which would enable him to lead an effectively healthy life and to participate meaningfully in understanding and solving the health problems of the family and the community.

   d) to replace the existing model of health care services by an alternative new model which will be

   -combining the best elements in the tradition and culture of the people with modern science and technology,

   -integrating promotive, preventive and curative functions,

   -democratic, decentralised and participatory,

   -oriented to the people, i.e. providing adequate health care to every individual and taking special care of the vulnerable groups,

   -economical, and

   -firmly rooted in the community and aiming at involving the people in the provision of the services they need and increasing their capacity to solve their own problems, and

   e) to train the personnel, to produce drugs and materials and to organise research needed for this alternative health care system.

3. A detailed time-bound programme should be prepared, the needed administrative machinery created and finance provided on a priority basis so that this new policy will be fully implemented and the goal of "Health for All" be reached by the end of the century.

HEALTH STATUS IN THE CONTEXT OF INDIAN SOCIETY

C.R.I. Session
Ashirvad
January 1984

A reading list:

1. Health For All - an alternative strategy
   ICMR/ICSSR Report (1981) Rs.18.00

2. The Quest for Health. ed. J.C.
   McGilrray (1979)

3. Statement of National Health Policy
   Government of India (1982)

4. Health Care - Which way to go ?
   Ed. Abhay Bang & Ashvin Patel, MFC (1982)
   Rs.10.00

5. In Search of Wholeness --- Healing and Caring
   Contact : Special Series No. 2. June 1979

6. The New Orientation of Health Services, with respect to Primary Health Care Work
   Cor Unum, 1976.

7. Community Health Programme - a new vision and philosophy
   CHAI, 1983.

8. Church and Social Justice
   Stan Lourdusamy, C.S.A. 1979. Rs.4.00

9. Health Care in India
   George Joseph, John Desrochers, Mariamma Kalathil
   C.S.A. 1983 Rs.4.00

10. Rethinking the Healing Ministry of the Indian Church
    Jacob Chand, CISRS, CLS Madras 600 003 (1970)

Nos 1-5 available from

Voluntary Health Association of India
C-14 Community Centre
Safdarjung Development Area
New Delhi 110 016

Nos 6-7 available gratis from
Community Health Department
Catholic Hospital Association of India
CBCI Centre
Goldakkana
New Delhi 110 001

Nos 8-9 available from
Centre for Social Action
Gundappa Block
64, Pemme Gowda Road,
Bangalore 560 006

Ashirvad A/8

SOLVING PROBLEMS AND MAKING DECISIONS

When a group (or an individual) is faced with solving a problem or making a decision, there are five steps which can be followed. These steps will make for greater clarity and effectiveness while considering the problem or the decision, and they will also lead to a better final decision.

1. Define the problem

Ask yourselves "What is the real problem before us?" If you cannot agree on what the problem is, you certainly will not agree on the solution! A clearly-defined problem is already a great help towards a solution.

What appears to be the problem may be only a superficial sympton. Underneath there may be larger and deeper issues.

Express the problem in "How to..." terms. Do not say, 'the problem is moderating discussion', but, " The problem is how to learn to moderate discussions effectively".

2. COLLECT POSSIBLE SOLUTIONS

Ask yourselves, 'what are the possible solutions to this problem?" Make a list of all the ideas, possible solutions and suggestions without evaluating any of them. (The process is similar to 'brain-storming').

It is important to separate the collecting of ideas in this step from evaluation: The evaluation should come only in the third step. If you evaluate ideas in this second step, itwill inhibit the contribution of further ideas.

Make the list of possible solutions as long and complete as possible. Some people believe that the quality of the final decision depends on the number of possible solutions collected during this second step.

3. Evaluate the possible solutions and choose the best

Ask yourselves, "Of all the alternatives we have listed, which is the best solution?"

Weigh the pros and cons of each possible solution.

Encourage dissent and disagreement among the members of the group. This will help in the completed examination of every possibility. Beware of easy agreements-they probably have not been thought through completely. At the same time, avoid being defensive or making others feel defensive. Try to separate the ideas and solutions from the individuals who contributed them.

There are two important aspects to an effective decision One is the quality of the decision. Ask yourselves, "Does this decision accomplish our purpose? Will it effectively solve the problem?" The second aspect is the acceptability of the decision to those who have to carry it out.

If you find that you now need further information or an expert opinion, get it before the decision is made, not afterwards!

Consider whether the group itself is ready to make a decision. Sometimes groups (like individuals) need time to 'think over' a decision before finally making it.

4. Implement the decision

Decide on the steps for implementing the decisions. Ask yourselves, "who is going to do what? When? How? Be sprcific put names against actions.

A decision which does not include details of how the decision is to be implemented may be ineffective and even useless. Lots of good ideas are never translated into action because their implementation is not taken care of

As well as deciding who will do what, when and how, there may be other questions, such as, 'who else should be informed of this decision?.

5. Follow-up

Ask yourselves, "How will we check on how this decision is working in action?" It is important that the group decides at the time they make the decision how they are going to arrange for follow-up and feedback.

Source: McGrath, E.H., Basic Managerial Skills for All, XLRI, Jamshedpur, 1978.

PEOPLE IN DEVELOPMENT - A Trainer's Manual for groups John Staley.

C-9/244(c)
m:13.12.82

Prepared by
Community Health Team
Voluntary Health Association of India
C-14, Community Centre, S.D.A.
New Delhi-110 016.

EVALUATION OF A PROGRAMME

S E C T I O N I

Evaluation is a process by which the outcome (result) of an activity is judged. By judging the outcome we can decide whether the activity should be continued, modified or stopped. Therefore evaluation is a tool that helps us to work in a better way. For evaluation to be of use we must have an open mind to be critical about our own work. We must also be willing to learn from past mistakes.

When to think of evaluation

Evaluation of a programme is a continuous process. It begins as we are making our plans. This is to help us to be sure that activities we plan are related to the needs we want to meet. We will need to evaluate at regular intervals during the implementation of the programme to see if we are going in the right direction or need to make any change. At the end of an activity we will want to evaluate to know if we have reached the desired result.

I - EVALUATION WHEN PLANNING A PROGRAMME

When we plan any activity we usually have some idea as to what we hope to achieve through this activity. Very often the idea may be as vague as "We want to improve the health of the people". This statement is too general and is difficult to evaluate. A better way is to state in more specific terms how we are going to improve the health status and how we are going to measure this improvement in the health status. For example, we all know that infant mortality rate (IMR)* is very high in our country. Our country cannot be called healthy unless we reduce the IMR. In other words a reduction in IMR shows (indicates) an improvement in the health status of the population. Measuring the reduction in IMR automatically means a measurement of health status. Infant mortality rate is therefore called a health indicator. Other examples of health indicators are maternal mortality rate and morbidity rate.

From the above it is clear that if we want to evaluate our programme we will have to be clear at the time of planning

- what we hope to achieve through the activity
- how we are going to meansure the achievement.

Going back to our example of IMR, we all know that more children die in families with poor income. So when we say that we want to reduce IMR we are indirectly saying that we will focus our attention on the infants who come from poor families. The infants from poor families are now our target group.

If we do not ask ourselves the right questions at the time of planning, we are bound to meet problems at a later stage. While planning a programme the following questions should be kept in mind.

- Is the proposed programme directed to an important problem of the community ?
- Is this problem a real priority with the people ?
- How much of the problem does the programme plan to solve ?
- How effective do we expect the planned activities to be in solving the problem ?

---

* Infant Mortality Rate is the number of deaths in children below one year of age per 1000 live births.

- What desirable and undesirable side effects can be anticipated ?

- How are we going to involve the village people in the activities ?

- How much will the programme cost to achieve the results ?

- Who is going to meet the cost of the programme ?

Good planning helps in the evaluation of the programme.

II - EVALUATION DURING THE IMPLEMENTATION OF THE PROGRAMME

Here, we are trying to judge the outcome (result) of an activity. Depending on the activity we could evaluate it at frequent intervals during the activity and also once at the end of the activity.

What Do We Want to Evaluate

A- Effectiveness of the services:

In order to measure the effectiveness of the services it is necessary to measure the extent to which people get the services that were planned to meet their needs. We would also have to decide whether the services have been of real benefit.

For example, in our village we may have found that the incidence of whooping cought is very high. We may have decided to immunize all the under five children with DPT. After one year of the programme we want to evaluate the effectiveness. For this we would have to find :

- the total number of under five children who received all the 3 doses of DPT at the correct interval

- the total number of under five children in the village.

On the basis of this, we can calculate the percentage coverage.

$$\text{Percentage coverage of DPT} = \frac{\text{Total number of Under Five immunized in village}}{\text{Total number of U.F. in village}} \times 100$$

This gives us an indication as to how effective our coverage is, i.e. the total percentage of children receiving the 3 doses of DPT at the correct interval.

But our immunization programme can be said to be of benefit only if we are able to show that it has significantly reduced the incidence of whooping cough in the area. To find out this we would have to know :

- how many cases of whooping cough were there in the year before the immunization programme ?

- how many cases there were in the year following the immunization programme ?

Supposing we have immunized at least 90% of the under five children in the project area with DPT but the incidence of whooping cough has not come down, we would then have to find out -

- whether the time interval between doses was correct ?

- whether all the 3 doses were given ?

- was the vaccine kept under the necessary conditions ?

B- The process by which the result was achieved;

The main thrust in a Community Health Programme is to organize the community to make a collective effort towards improving the health status. The same result can be achieved in different ways. But each way will be qualitatively different.

For example, in village A, there is lack of clean drinking water. Due to this lack of clean drinking water there are many cases of diarrhoea. Now this village needs a tube well. There are many ways in which the village can get a tube well.

- the health team can apply to a funding agency for money and dig the well;
- the village people can write up a petition to the BDO for a tube-well;
- the village people can contribute part of the expenses (either cash or labour) to supplement the cost;
- the village people could wait for 2000 AD (when there will be health for all).

Applying to a funding agency is an easier way. It doesnot involve much decision making or involvement at the community level. The health team assesses the need of the village, writes to a funding agency and gets the well dug. In this process the village people are merely passive on-lookers.

In the second method, the writing up of a petition or sending a delegation to the BDO will need the involvement of the village people. Many meetings will have to be called, the people will have to decide on many issues (who should go, who should write the application, what is the next step or action if BDO is not forthcoming). Going to the BDO also means the beginning of an initiative, a realization of their strength. The process of dealing with the Government structure collectively might itself become a great educational process. Probably the time taken for the well to be dug will be much longer than in the earlier case but the emergence of an organized group of people would have been worth it.

When we want to evaluate the process by which a result was achieved the following questions should be kept in mind :

- Were the village people involved in any decision making related to planning and implementation of the programme ?
- How many of the village people were involved in this decision making and which group did they belong to ?
- What was the process of decision making ?
- Did the activity result in the emergence of an organized action in the village ?
- Has the process of decision making followed in this activity set an example for future activities ?

C- Equity:

Equity should be a primary focus of all health programme. So, the question is not merely has health improved, but has it improved for the poorest section of the village ? How many of the most disadvantaged group are covered by the programme ? How many of their children are immunized ?

In Pushpa Health Centre, the daily OPD attendance was 60. Patients came from far and wide and the dispensary was making good income. But an analysis of the OP records for one year showed that 70% of the patients came from outside the target area and belonged to the richer section. The dispensary staff were spending 70% of their time on rich people. The question before the staff was :

- Should they continue to spend so much time for the rich people ? Or

- Should they work in a different way so that the poor people (who form 80% of the population) make better use of the services ?

D- Changes in behavioural patterns:

Many community health programmes spend more time collecting numerical facts like the number of children immunized, the number of tube wells dug, the number of mothers who got tetanus toxoid etc. While numerical data is important, they are not necessarily the true indicators of change in a community. It is more important to assess attitudes and changes in behaviour in the community. For example, if a V.H.W. has convinced a mother that her relatively healthy looking child is becoming undernourished when he fails to gain weight, or if a traditional birth attendant (dai) has started sending pregnant mothers for antenatal checkups, great strides have been made towards changing the health status in a community. We must remember that knowledge alone does not change attitudes and practices.

E- Functioning of the health team:

A health team is a group of people working together to make health care possible in a community. The members of a health team include all those working together. For example, the supporting staff - a clerk, a driver, a cleaner - are all part of the team. It is important that their work and help they give be recognized as well as that of the medical assistants, nurses and community workers.

People work well together when they agree with one another.

i. Do all the members in the team know and understand the objectives of the organization ? (People who do not know what these objectives are may waste a lot of time in other activities. People who don't agree with the objectives may obstruct the work of the organization).

ii. Are the members involved in planning and carrying out the programmes ?

iii. Are the members involved in decision making related to the major issues (the direction the work should take, what activities must be done) ?

iv. Is work shared by all ? Does each person have specific work to do?

v. Are these responsibilities divided in the best way ?

vi. How are the member and their work supervised ? Does supervision take the form of support or is it done in an autocratic way ? (i.e. do what you are told and don't ask questions).

vii. Is each person in the team treated with respect or is respect given only to those in the decision making position (e.g. Doctor)

It is important for the health team to find out if the cost of the programme was justified in view of its results. As resources are limited we must be careful to use them in a way that would benefit the greatest number of people.

Two nurses decided to have a Community Health Programme which was to cover 6 villages with a total population of 5000. The objectives of the programme were worked out with the people of the village where the Nurses intended to start their programme. The total cost (recurring cost) was estimated as Rs. 30,600/- per year for the 5000 people. This cost would cover the salaries of the two nurses, the doctor's salary while he would visit the villages, the stipends of 6 VHWs and the maintenance of a vehicle.

The nurses started their work in the first village which had an average of 800 people. They got so much involved in that village that they never went to the other 5 villages which should have been part of the programme.

At the end of three years the programme was evaluated. The result of the work was very positive; all children had been vaccinated and had received Vitamin A treatment, the dais had been trained the village had chosen three Village Health Workers, the VHWs had been trained by the Nurses and the village promised to pay them once their training was completed, and did it at the rate of Rs. 30/- per VHW per month. So all seemed perfect.

But then, when evaluating the cost of the programme it was realised that it had cost about Rs. 40/- per person per year (an average of Rs. 200/- per family per year) to insure a minimal health service in this village.

Considering the very limited financial resources available in India can we expect the people to be able to meet the cost of such a programme ?

The two questions that the health team should ask are :

- Could the same resources achieve better results ?

- Could the same results be achieved with less resources ?

H- Unforeseen side effects:

Side effects are generally unforeseen and can be good or bad. For example, a food for work programme was organizedin a village. The The programme included the digging of wells for irrigation purpose. The wells dug were good and thus land owners benefitted much from this programme. It was now possible for the big land owners to have two crops in a year. Unfortunately the majority of the village people who had no land were unable to make use of this programme. The poor people in the village developed a feeling of hatred towards the health team and the health team could no longer work with the poor people. In this case, the side effect of the programme was bad.

In another village, the leaders chose a low caste woman to be the VHW, because they considered the tasks performed by a V.H.W. as "dirthy". The health team was not happy with their choice because she was illiterate. After one year the health team realized that the VHW was able to bring about a considerable change in the low caste population of the village which also was the poorest section in that village. Since the objective of the health team was to reach out to the poor people, this was achieved.

In this case the side effect of the programme was good.

III - WHAT DO WE REQUIRE TO BE ABLE TO EVALUATE OUR WORK

A- Knowledge of the area before the programme was started:

i. Knowledge regarding health situation - birth rate, infant mortality rate, morbidity rates etc. This information can easily be obtained from the PHC, DHO.

ii. Knowledge about the facilities available in the area

iii. Knowledge about socio-economic status, cultural beliefs, etc.

It may not be possible to know everything about the area. Some information is required before we start and more can be collectedinformally as we work.

B- Baseline data and records:

We have described the collection and usefulness of baseline data in a previous handout. This data is important as we can not only plan our services but also evaluate our work. As explained in another handout, records maintained for ongoing programme are also necessary for evaluating our work.

C- A well planned programme:

If we ask ourselves the right questions as stated in the beginning part of this paper, it will be clear to us where we want to go. What we want to achieve through our programme and activities will also be clearer.

D- Village diary:

This is a record of the events as we observe during our village visits. This also contains a report of the various village meetings held and decisions taken. This is a useful way of finding out if there has been any change in the attitude of the village people towards us, whether there has been any changes in some of the cultural practices, etc. These attitudes are hard to assess in statistical terms but they are much more important than statistical data.

E- Minutes of the team meeting, records of tasks each member is supposed to do.

F- Open-mindedness:

Finally we need to be open enough to look at our work critically and objectively. If an activity we have put our heart and soul in, does not turn out to be of much value, we should be able to accept it, learn from the failure and change our direction if necessary.

IV * TO SUMMARIZE

The purpose of an evaluation is to find out if

- the activities of the programme are meeting the most important needs of the people
- the activities are satisfactorily meeting the needs
- the people of the community are involved in the programme
- there has been any unforeseen harmful side effect
- the result justifies the cost.

Answers to these questions will help us to decide if our programme has been of value and whether we should continue, modify or change the activities.

S E C T I O N II

So far, we have discussed the methodology of evaluating a community health programme. Three basic issues, however, still remain to be examined. We shall discuss these one by one.

I - THE ROLE OF AN EXTERNAL EVALUATOR

It is unfortunate that normally evaluation is associated with an outside evaluator and many C H. programmes wait for an outside "expert" to evaluate their work. It is the function and responsibility of each member of the team to evaluate his/her work and the team's work.

Ideally in Community Health the evaluation must be carried out by the team members along with the people of the village. Since they have been involved right from the beginning they would be in a better position to say if some of the attitudes and practices have changed over the time period. Evaluation should be built into on-going management of a C.H. programme.

Evaluation carried out by outside experts is a particularly threatening situation and explains much of the resistance to evaluation. The word "evaluation" itself has come to be very emotional for many people, as are words like "police". But if it becomes a management tool controlled by those involved, this threat is removed.

This does not mean that there is no role for external evaluation. Fresh and possibly, more objective insights, brought in by external evaluators, can be useful, provided there is a viable mechanism for feedbak into the decision-making process. Lack of such feedback is usually the main problem in external evaluations.

II - OBJECTIVITY

There is an assumption that evaluation must be scientifically objective. Such an assumption implies a lack of involvement in and commitment to a programme. But being part of a programme is not only compatible with objectivity but it is essential for a sympathetic understanding of the objectives and problems of the programme.

Furthermore, it is increqsingly clear that there is no such thing as objective evaluation. Objectivity tends to be defined within the limits of the priorities and perceptions of the evaluators. Decisions about the information to be collected, choice of samples, selection of criteria, relative weighting, methods of statistical treatment and presentation of results all involve value judgements which need to be stated clearly.

There is another trend in evaluation in the health field; a tendency to reject information which is not in the form of hard statistical data. Some of the most important aspects of a programme may not be measurable. In the words or one social scientist, "Truth in the field of human affairs is better approximated by statements that are rich with a sense of human encounter". Too rigid an evaluation framework may turn out to be mistaken. Evaluation can yield new questions as it is carried out provided investigators have an open mind. A sense of open inquiry and a willingness to learn must be encouraged.

III - EVALUATION FOR WHOM

In considering an evaluation, very important questions are : Who is the evaluation for ? Whose questions will be answered ? Are they those of the external funding agency ? The programme managers or top level planners ? The health workers involved at the intermediate and field levels ? The beneficiaries themselves ? Which beneficiaris ? The poor ?

The women ? All these groups have a right to ask questions. There may be overlapping interests, but the questions each group considers important are likely to differ. The emphasis today on a participatory approach to evaluation recognizes that investigators and their subjects perceive different realities. It is arrogant, exploitative and counter-productive for researchers, funding agencies or health planners alone to determine what should be investigated. All have their biases and value systems. Some would argue that if different groups have such conflicting interests, then agreement among professionals, managers and consumers is unlikely in the real world. When resources are scarce, there is likely to be considerable conflict on how they should be used. Much depends on who defined the health needs, but no voice, such as women. This conflict is one reason why objectives and targets are so often ill-defined. Hidden conflicts are manageable if they remain vague, incoherent and mystified. To sharpen them would be to expose these conflicting interests. While agreement is a goal, it should be recognized that different people have different perceptions of need and objectives. Those concerned about evaluation must be sensitive to different groups, particularly those who have few means to tell their needs.

The people themselves will want to ask many questions. Are they getting what they think they need from this health programme ? What do they really need ? Has anything improved for them ? Do less children die each year ? Are there less poor people in their community ? How is sickness contributing to their poverty ? What can they themselves do to change the situation ? How can they get more power to influence the decisions about getting public resources ? Priorities regarding the various interests served by the evaluation must be known at the beginning. Evaluation for whom ? Whose indicators ? Whose objectives ?

Note: This paper has been prepared keeping in mind the requirements for a small community health programme. We have therefore not gone into the question of selecting control population, samples, etc. We have also not talked about how to use rates as indicators of change as it is not applicable to a small population.

*** *** ***

Acknowledgements:

1. "International Health and Measuring Progress" Proceedings, 1980 International Health Conference, June 11-13, 1980. Published by the National Council for International Health, Washington.

2. "On Being In Charge" - A guide for Middle Level Management in Primary Health Care: by McMohan, Barton & Piot : Published by WHO, Geneva.

Voluntary Health Association of India

C-14, Community Centre,
Safdarjung Development Area
New Delhi-110016

Telegrams : VOLHEALTH
New Delhi-110016
Phone : 652007, 652008

RECORDING CHANGES IN THE BASELINE SURVEY

When we did the baseline survey we found out many details about the people of a village. However, things do not remain the same. The population of a village is constantly changing. People leave the village, some newcomers may settle in the village, people marry, children are born, some people die. It is important that we record some of the above mentioned changes so that we can have correct information about the villages in which we are working.

What changes do we need to record:

This depends on the information that has been collected in the baseline survey. According to the paper on the baseline survey given before, the information to be recorded and a sample table to record this information is given at the end of this paper.

How to maintain these records:

1. In column 1, enter date on which you are recording a change.
2. To record a change for a family, find out the name of the head of the family and enter it in column 4. This will be the same as in the baseline survey.
3. See the serial Number given to this family in the baseline survey and write this same serial number in column 2.
4. In column 3, write the same House Number for the family as in the baseline survey.
5. If the head of the family has changed write the name of the new head of the family in column 5. If the previous head of the family has died, enter death in column 8 also.
6. If a new member joins the family permanently, eg: new daughter-in-law comes to family, or any other relative comes to live permanently in family, write number of additions to family in column 6 (a). Also write in remarks column if this person is under five, pregnant, etc.
7. If a member of the family leaves the village permanently eg: daughter-gets married and leaves village, or any other member leaves village permanently, write number of people that have left family in column 6 (b). Also write in remarks column if this person was an under-five, a pregnant mother etc.
8. If a child is born in the family enter in column 7.
9. If a member of the family dies enter in column 8.
10. If a new family comes to live in the village: turn to the section in which you entered the baseline survey. Draw a line at the end of the baseline survey and give the next serial number to the new family. Enter the details along the columns of the baseline survey.
11. If a family leaves the village permanently fill in columns 1 to 4 and write in the remarks column "left village".
12. In remarks column enter details like death of any member of the family, reason for death, and any other relevant information.

.....2/

When do we record these changes:

If we have trained Village Health Workers, we should find out from them if any changes have taken place in the village. In fact, they should report changes to the health team regularly, atleast once in two weeks. If we do not have VHWs then we would have to collect this information ourselves by systematically visiting each family atleast once in six weeks.

xXx

*chtt:pt:28.8.'81

CHANGES IN THE BASELINE SURVEY

	Date	1
	Serial No.	2
	House No.	3
	Name of Head of the Family	4
	Name of NEW Head of family	5
	Joined family (No. of members)	6
	Left family (No. of members)	
	Births	7
	DEATHS: 0-1 yr.	8
	DEATHS: 1-5 yrs.	
	DEATHS: Maternal	
	DEATHS: Others	
		9 REMARKS

COM H-49A.

Erasmus

3 Weeks with 24 Courses in Quantitative Medical Research

Rotterdam
The Netherlands
August 10 - August 28
1998

Programme and
course information

Biostatistics
Clinical Research
Epidemiology
Health Services Research
Human Genetics
Public Health

12273
14/2/98

The 8th Erasmus Summer Programme

The 1998 Erasmus Summer Programme

The Erasmus Summer Programme

The Erasmus Summer Programme emphasizes an understanding of principles and methods of quantitative medical research. Open to all health professions, the programme focuses on the basics common to all applied medical and health care research. In addition, the programme provides courses for the particular interests of those in clinical medicine, general practice and public health as well as for epidemiologists, geneticists and biostatisticians. Six main areas are covered by the Erasmus Summer Programme: biostatistics, clinical research, epidemiology, health services research, human genetics and public health research. The first week provides introductory courses, the second week is devoted to methodology courses and the third week offers advanced courses. It is possible to subscribe for 1, 2 or 3 weeks in a single discipline or to mix and match courses from different disciplines in order to design your own individual programme.

Biostatistics

A very important aspect of quantitative medical and epidemiological research is data-analysis. The courses on biostatistics and data-analysis provide a comprehensive and thorough understanding of the data-analytic methodology currently used. The course levels range from introductory to advanced. The first week provides for an introductory level course and a more advanced course on meta-analysis. In the second week an extensive course on regression analysis is given, and a course on survival analysis. The third week gives an advanced course on statistical modelling in epidemiology.

Clinical Research

Clinical research increasingly depends on quantification of risk, diagnosis, prognosis and therapy. Knowledge of principles and techniques of the quantitative approach used in clinical medicine is indispensable for effective clinical research. The courses on clinical research will provide an in-depth treatment for those with little background in statistics and epidemiology. The first two weeks of this course will focus on the methodology of quantitative clinical research. In the third week, the principles of experimental drug research will be treated in depth.

Epidemiology

As a science, epidemiology is fundamental to clinical and community medicine, and to public health. In combination with basic medical science and clinical research, epidemiology provides the tools with which we can learn more about the etiology and effects of disease, the opportunities for prevention, the cost and effectiveness of various diagnostic and therapeutic approaches, and the health status and risks of individuals and populations. Introductory, intermediate and advanced courses in epidemiological research methods will be presented in combination with courses in clinical research, biostatistics, human genetics and health services research. This approach enables participants to gain insight into the ways in which the underlying epidemiological principles are implemented in the various areas of medical research.

Health Services Research

The quality, costs and benefits of therapeutic and preventive measures are hotly debated issues. Research in this field is becoming increasingly significant and will, in the near future more than ever before, provide the foundation for policy decisions in health care. Health services research is a multidisciplinary field which shares a common ground with epidemiology, economics and medical management. The objective of the courses on health services research is to provide insight into the relationship between these individual disciplines in order to give an understanding of research methods used in determining and evaluating management, insurance options and policy decisions.

Human Genetics

The courses on human genetics focus on the principles and practice of genetics with an emphasis on the statistical and epidemiological aspects of genetic research. The first week includes a general course on principles of research in medicine with some examples from genetic epidemiologic research. The second week has a course on genetic epidemiology. The second week also presents a course for those who wish to be introduced into the basics of molecular genetics. In the third week a course on genetics of complex diseases will be given.

Public Health Research

A series of courses is dedicated to public health research methodology. Public health research is a multidisciplinary area with the health of populations as the objective. The programme provides for an introduction to public health in the first week. The second week gives a course on methods of public health research in which study designs and analytic methods specific to public health research will be presented. Further, a course on epidemiology and health policy will show how epidemiological data and measures of effect can be used for public health decision making. In the third week, a course on public health bridging research and practice will deal with the translation of problems in public health into research questions, and of research results into public health practice.

14/2/98

Course Schedule

Time	Week 1: August 10 - August 14, 1998
8:45 - 11:45	Principles of Research in Medicine and Epidemiology *Albert Hofman* — E B C G H P
13:00 - 16:00	Introduction to Data-analysis *Theo Stijnen* — E B C G Clinical Decision Analysis *Job Kievit and Jacobus Lubsen* — C Meta-analysis *Anders Ahlbom* — E B C P Introduction to Health Services Research *Niek Klazinga* — H Introduction to Public Health *Louise Gunning-Schepers* — E H P
16:30 - 18:00	Introduction to Data-analysis *Theo Stijnen* — E B C G Epidemiology for Clinicians *Albert Hofman* — C

August 10 - August 28, 1998

Week 2: August 17 - August 21, 1998	Week 3: August 24 - August 28, 1998
Regression Analysis E B C G P *Stanley Lemeshow*	Survival Analysis E B C G P *David Kleinbaum*
Methods of Clinical Research E C *Diederick Grobbee*	Advanced Study Design E C H P *Olli Miettinen*
Methods of Public Health Research E H P *Johan Mackenbach*	Advanced Statistical Models in Epidemiology E G C *David Clayton and Michael Hills*
Molecular Genetics for Clinicians and Epidemiologists E C G *Peter Heutink and Ben Oostra*	Genetics of Complex Diseases E G C *Lodewijk Sandkuijl, Bertram Müller and Cornelia van Duijn*
	Medical Technology Assessment H P *Paul Kind and Frans Rutten*
	Public Health Bridging Research and Practice E H P *Louise Gunning-Schepers*
	Pharmaco-epidemiology C E *Bruno Stricker*
Regression Analysis E B C G P *Stanley Lemeshow*	Survival Analysis E B C G P *David Kleinbaum*
Genetic Epidemiology E G *Lodewijk Sandkuijl and Cornelia van Duijn*	Advanced Study Design E C H P *Olli Miettinen*
Health Economics H P *Wijnand van de Ven and Eddy van Doorslaer*	Advanced Statistical Models in Epidemiology E G C *David Clayton and Michael Hills*
Advanced Medical Decision Analysis E C H *Myriam Hunink*	Genetics of Complex Diseases E G C *Lodewijk Sandkuijl and Cornelia van Duijn*
	Design, Conduct and Analysis of Clinical Trials C E *Jan Tijssen*
	Epidemiology and Health Policy H P E *Louise Gunning-Schepers*
Genetic Epidemiology E G *Lodewijk Sandkuijl and Cornelia van Duijn*	Erasmus Summer Lectures E B C G H P
Conducting Epidemiologic Research E C P *Deirdre van der Kuip*	

E = Epidemiology; C = Clinical Research; B = Biostatistics; G = Human Genetics; H = Health Services Research; P = Public Health

Week 1: August 10 - August 14, 1998

The principles of quantitative research

8:45 - 11:45 **Principles of Research in Medicine and Epidemiology** Albert Hofman

This course will provide an orientation to medical research from a quantitative and epidemiological viewpoint. The course will give an introduction to the design of clinical and public health research, and it will discuss measures of disease frequency and association, and the validity of research in medicine. It will give an overview of elements of data-analysis (15 hrs).
Prerequisites: none.

13:00 - 18:00 **Introduction to Data-analysis** Theo Stijnen

This course will concentrate on statistical methods for the well known clinical and epidemiological frequency and effect measures, such as rate and risk, relative risk, risk difference and odds ratio. Furthermore, Mantel-Haenzsel methods for stratified analysis and simple survival analysis will be covered. The course will consist of lectures as well as practicals. In the latter an overview will be given of the main statistical computer packages that are used in clinical and epidemiological research, and their relative merits will be discussed. No prior experience with statistical programs or computers is required (22.5 hrs).
Prerequisites: some familiarity with basic statistical concepts.

13:00 - 16:00 **Clinical Decision Analysis** Job Kievit, Jacobus Lubsen

This course will give a framework for optimal decision making in the clinical setting based on probability theory and the rational use of available information. All theoretical principles will be applied to decision problems involving the individual patient. The course will provide for a practical on the use of decision making computer software (15 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology.

13:00 - 16:00 **Meta Analysis** Anders Ahlbom

The purpose of the course is to provide knowledge about various methods that can used to synthesize the epidemiologic evidence on a particular topic. The course will describe the different methods that are available and discuss their limitations and underlying assumptions. Methods to obtain combined estimates on the assumption of uniform effects across studies as well as approaches for non-uniform effects will be covered. The course will emphasize issues related to differences across studies. The teaching will consist of lectures, exercises, and analyses and discussions of case studies. This intermediate level course is intended for those with experience in data-analysis (15 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology;
Introduction to data-analysis; Regression Analysis.

Week 1: August 10 - August 14, 1998

The principles of quantitative research

13:00 - 16:00 **Introduction to Health Services Research** **Niek Klazinga**

This course provides a common starting point for all those who follow courses in the area of health services research in the Erasmus Summer Programme. Case studies will be used to illustrate the contribution to health services research of different disciplines, such as epidemiology, economics and policy analysis. Topics which will be covered include: needs and demands; health care utilization; equity and efficiency in the delivery of health care services; outcome evaluation; quality assessment; economic evaluation; international comparison of health care systems (15 hrs).
Prerequisites: none.

13:00 - 16:00 **Introduction to Public Health** **Louise Gunning-Schepers**

Public health defined as the organized efforts of society to protect, promote and restore the health of populations is a field in which many disciplines meet: medicine, economics, law, social sciences, epidemiology, etc. In this course an introduction to public health will be given in a historic context to illustrate the contribution of these different diciplines and to explore the different functions in which professionals in public health can be expected to function (15 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology.

16:30 - 18:00 **Epidemiology for Clinicians** **Albert Hofman**

This course will give an introduction to clinical epidemiology. The topics that will be covered include risk (determinants of disease, pathogenesis), diagnosis (evaluation of diagnostic tests), prognosis (prediction of disease outcome), and therapy (evaluation of efficacy and safety) (7.5 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology.

Week 2: August 17 - August 21, 1998

The methodology of quantitative research

8:45 - 16:00 Regression Analysis — Stanley Lemeshow

This intermediate level course aims at providing theoretical and practical training for epidemiologists, clinicians and other professionals of related health disciplines in statistical modeling with particular emphasis on linear, multiple and logistic regression. Included topics are: review of straight line regression and correlation, ANOVA for straight line regression, appropriateness of straight line model, polynomial regression, multiple regression analysis, partial F-test, dummy variables, statistical interaction, comparing straight line regressions, analysis of covariance, the logistic regression model and estimation and interpretation of its coefficients, goodness-of-fit, multivariate modeling and statistical adjustment, interaction and confounding, stratified analysis via logistic regression. The following texts will be used: Applied Regression Analysis and Other Multivariate Methods by Kleinbaum, Kupper and Muller; Applied Logistic Regression by Hosmer and Lemeshow (30 hrs).
Prerequisites: Introduction to Data-analysis.

8:45 - 11:45 Methods of Clinical Research — Diederick Grobbee

This course develops the design of occurrence relations for clinical research problems of diagnosis, prognosis and intervention. It also discusses the research methods for this. The course will be based on real life clinical problems, and it will discuss a variety of examples. The course will include a number of exercises (15 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology, or equivalent knowledge.

8:45 - 11:45 Methods of Public Health Research — Johan Mackenbach

This course is intended to provide an introduction to a number of analytic methods and study designs frequently used in public health research. Examples are: standardization of morbidity and mortality rates; life table analysis; calculation of measures of association and potential impact of relevance to public health; ecological studies and studies of disease clusters; evaluation of cancer screening programmes. In addition, a number of substantive issues will be discussed, such as inequalities of health; public health aspects of ageing; and the causes of cancer. The course will be relevant to those who have a basic knowledge of epidemiology, and who wish to start a career in public health research (15 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology, or equivalent knowledge.

Week 2: August 17 - August 21, 1998

The methodology of quantitative research

8:45 - 11:45 Molecular Genetics for Clinicians and Epidemiologists Peter Heutink, Ben Oostra

Molecular genetics plays an increasingly important role in medical research. The aim of this course is to provide insight into the basic techniques and definitions in molecular genetics. The course will introduce how a linkage study is to be set up in the laboratory and how to interpret the results from such a study (linkage analysis, haplotyping). The course will further focus on the various ways how to follow up such a study and how to identify (disease) genes. The course is particularly intended for clinicians and epidemiologists who wish to be introduced into the basics of molecular genetics and its practical applications (15 hrs).
There will be an attunement between this course and the courses "Genetic Epidemiology" and "Genetics of Complex Diseases".
Prerequisites: Familiarity with general genetic concepts.

13:00 - 18:00 Genetic Epidemiology Lodewijk Sandkuijl, Cornelia van Duijn,

This course gives an introduction to various statistical methods of genetic epidemiology. The focus of the course is on the identification of genetic determinants of disease through epidemiologic and genetic research. Factors that determine the frequency of monogenetic and complex genetic disorders are introduced. Theoretical and practical aspects of segregation, linkage and association studies are discussed. New methodological developments in the field of genetic epidemiology will be addressed. Determinants of frequency of genetic disorders will be studied via series of interactive computer programs. Simple likelihood calculation
will be introduced. Through discussion of published articles, methodologic pitfalls in genetic and epidemiologic studies will be addressed. The course is intended for epidemiological and clinical or laboratory researchers who wish to acquire general knowledge of statistical genetics (22.5 hrs)
Prerequisites: Clinical Genetics course or equivalent knowledge.

:00 - 16:00 Health Economics Eddy van Doorslaer, Wynand van de Ven

This course is an introduction to health economics and can be followed without formal training in economics. It sets out to illustrate the usefulness of economics to the understanding of public policy and services provision in the health care sector. Special emphasis will be given to the analysis of the demand of health care for health insurance. Furthermore, the coexistence of a variety of health care systems will be discussed in terms of their implications for efficient and equitable allocation of health care resources (15 hrs).
Prerequisites: Introduction to Health Services Research.

Week 2: August 17 - August 21, 1998

The methodology of quantitative research

13:00 - 16:00 Advanced Medical Decision Analysis **Myriam Hunink**

This course deals with advanced topics in medical decision making. Topics to be discussed include: 1) dealing with bias in evaluating diagnostic tests, 2) ROC and Summary ROC analysis, 3) determining the optimal operating point on the ROC curve, 4) problems with utility assessment and multi-attribute utility theory, 5) Markov process models and 6) Monte Carlo simulation modeling. The course will focus on practical application of techniques and how to interpretate the published literature in this area (15 hrs).
Prerequisites: Introduction to Data-analysis, Clinical Decision Analysis, or equivalent knowledge.

16:30 - 18:00 Conducting Epidemiologic Research **Deirdre van der Kuip**

An essential part of epidemiologic research concerns the collection and handling of data. This course will discuss the main issues in the conduct of epidemiologic research. It will cover ways and means to obtain participation of subjects, practical issues in data-collection, and important aspects of data-handling. The course will include a series of practicals. This course is focussed on individuals who have had no or little practical experience in conducting epidemiologic research (7.5 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology.

Week 3: August 24 - August 28, 1998

Advanced courses and current topics in quantitative research

8:45 - 16:00 Survival Analysis — **David Kleinbaum, Holly Hill**

This course will provide an introduction on the concepts and methods of survival analysis. We begin with an overview of the general goals of survival analysis, basic notation and terminology, the data layout, and some simple examples. We then describe the Kaplan Meier (KM) approach for estimating survival curves and the logrank test used for comparing KM curves. We then introduce the Cox Proportional Hazards (PH) model and describe its characteristics, including the reason for its popularity and the meaning of the PH assumption. This is followed by a discussion of methods for assessing the PH assumption, and options for the analysis when the PH assumption is not satisfied. One of these options is called the "stratified Cox procedure", which will be described and illustrated using computer output. The other option involves using time-dependent covariates, which will also be described and illustrated. A general description will also be given on the use and characteristics of the "extended Cox model", which considers time dependent variables of any type. We conclude with several examples of the use of the extended Cox model to analyze survival data involving time dependent variables (30 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology, and Introduction to Data-analysis. Familiarity with computer procedures for regression modeling is not essential but desirable. Some applied knowledge of maximum likelihood techniques is also desirable.

8:45 - 16:00 Advanced Study Design — **Olli Miettinen**

This course is founded on the premise that applied clinical and public health research is occurrence research, i.e., concerned with the frequency of some outcome event or state in relation to determinants of this frequency. The course challenges received wisdom in applied medical research. Study design is addressed as a matter of two broad topics: designing the occurrence relation as the object of study, and designing the experience that is to provide information about it. Examples will be drawn from both clinical and public health research (30 hrs).
Prerequisites: Principles of Research in Medicine and Epidemiology, or equivalent knowledge.

Week 3: August 24 - August 28, 1998

Advanced courses and current topics in quantitative research

8:45 - 16:00 **Advanced Statistical Models in Epidemiology** **David Clayton, Michael Hills**

The course describes what regression models are and how they are used in epidemiology. It covers Poisson regression for follow-up studies, logistic regression for matched and unmatched case-control studies, and Cox's regression model. The morning sessions consist of lectures based on Part II of Statistical Models in Epidemiology by Clayton and Hills, and the afternoon sessions are spent analysing a variety of different data sets using a computer package (30 hrs).
Prerequisites: elementary statistical methods as applied to follow-up and case-control studies. The abovementioned book will be available at the Erasmus Summer Programme, but preliminary reading of Part I is recommended.

8:45 - 16:00 **Genetics of Complex Diseases** **Lodewijk Sandkuijl, Cornelia van Duijn and Bertram Müller**

This course gives a comprehensive overview of theoretical and statistical aspects of genetic studies of complex diseases. Classical and recently developed methodology will be discussed. New developments in the design of studies that will be addressed include the use of parent controls, selected inbred populations and haplotypes. The statistical power of the various strategies will be compared. Theoretical aspects of the statistical analysis will be introduced and practical exercises using computer programs will be discussed. The course is intended for researchers working in the field of genetics and epidemiology (30 hrs).
Prerequisites: Genetic Epidemiology.

8:45 - 11:45 **Medical Technology Assessment** **Paul Kind, Frans Rutten**

The course emphasizes economic evaluation of health care technology as the core element of medical technology assessment. Methodological and practical issues are being considered and illustrated using examples based on ongoing studies. The relation between medical technology assessment and health policy is highlighted and attention is given to the measurement and valuation of health related quality of life. The course is open to researchers in the clinical and health services research field as well as to health professionals and health policy makers (15 hrs).
Prerequisites: Introduction to Health Services Research.

Week 3: August 24 - August 28, 1998

Advanced courses and current topics in quantitative research

8:45 - 11:45 **Pharmaco-epidemiology** Bruno Stricker

Pharmaco-epidemiology pertains to the study of the use and of the effects of drugs. It links clinical pharmacology and epidemiology. This course provides, at an intermediate level, the theoretical basis for studying the intended effects as well as the adverse effects of drugs used in humans. The course will mainly focus on drug research after marketing, including post marketing surveillance and drug risk assessment (15 hrs).
Prerequisites: Methods of Clinical Research.

8:45 - 11:45 **Public Health Bridging Research and Practice** Louise Gunning-Schepers

In this course the central theme is the application of results of research in public health in decision making. It will look at both the translation of problems in the field of public health into research questions as well as the translation of the research results for public health practice. In addition, the course will provide a case study on the relation between research and decision making concerning the policy decision to offer breast cancer screening (15 hrs).
Prerequisites: Introduction to Public Health, Principles of Research in Medicine and Epidemiology, Methods of Public Health Research.

13:00 - 16:00 **Design, Conduct and Analysis of Clinical Trials** Jan Tijssen

This course presents the principles and methods for designing and analyzing randomized clinical trials. The purpose of this course is to provide practical guidelines for the conduct of a clinical trial. Topics such as randomization, patient recruitment and ethics will be discussed. The methods of analyzing trials of various designs are presented (15 hrs).
Prerequisites: Epidemiology for Clinicians, Methods of Clinical Research or equivalent knowledge.

13:00 - 16:00 **Epidemiology and Health Policy** Louise Gunning-Schepers

In this course the central theme is the use of epidemiological data and measures of effect for public health decision making. It will look at the interactions between risk factors, disease categories and demography and will discuss their application to decision making in health policy. It will also explore epidemiologic simulation models. This course is meant for those involved in public health decision making, either at the policy level or at the health research level (15 hrs).
Prerequisites: Methods of Public Health Research.

ERASMUS SUMMER LECTURES

For the 1998 Erasmus Summer Lectures the following speakers have been invited (final programme has still to be decided):

Health Services Research: Saviour or Chimera?
Professor Nick Black, FFPHM, London School of Hygiene and Tropical Medicine, London, UK
Monday August 24, 1998, 16:00 - 17:00 hrs.

Study Design in Clinical Research
Professor Olli Miettinen, McGill University, Montreal, Canada
Tuesday August 25, 1998, 16:00 - 17:00 hrs.

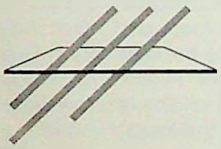
The Future of Epidemiology
Professor Dimitrios Trichopoulos, Harvard University, Boston, Massachusetts, USA
Thursday August 27, 1998, 16:00 - 17:00 hrs.

Erasmus Summer Lectures: Auditorium 5,
Erasmus University Medical School,
Dr. Molewaterplein 50, Rotterdam.

Entrance is free for participants of the Erasmus Summer Programme, faculty and students of the Netherlands Institute for Health Sciences and Erasmus University. For others, please contact Ms. Marie Louise Bot,
Office for Post Graduate Medical Education.
Phone: 010 - 4087881,
Fax: 010 - 4367271,
E-mail: secr@paog.fgg.eur.nl
Internet: http://www.eur.nl/fgg/paog/esp

The Netherlands Institute for Health Sciences

The Erasmus Summer Programme is organized in collaboration with the Netherlands Institute for Health Sciences (NIHES). The NIHES aims at identifying, on the basis of quantitative research, the determinants of health and disease, and the factors which contribute to the effectiveness and efficiency of health services. Core disciplines in the NIHES are (clinical) epidemiology, health services research and medical informatics. Master of Science and Doctor of Science programmes in each of these disciplines are organized. Structured theoretical training and the conduct of a research project are an integral part of all programmes. Participants may take part in exchange programmes with the University of Cambridge, Karolinska Institute, Columbia University and the New England Epidemiology Institute. The NIHES and the Netherlands School of Public Health (NSPH) offer, in cooperation, a Master of Public Health programme.



The Netherlands Institute
for Health Sciences

The MSc programmes

Master of Science programmes are organized in epidemiology, clinical epidemiology, health services research and medical informatics. These programmes provide a first semester of theoretical training with a shared core curriculum, consisting of courses in study design, biostatistics and data-analysis. In the second semester a research project is carried out and a research paper is prepared under the guidance of a personal tutor. In this semester participants will also follow more advanced courses.

The DSc programmes

Doctor of Science programmes are organized in each of the disciplines. These programmes consist of four semesters. The first two semesters will provide elaborate theoretical training of participants. During the four semesters participants will be able to follow advanced courses in study design, biostatistics, data-analysis as well as advanced discipline specific courses. A research project will be carried out after the first semester under the guidance of a senior tutor.

The MPH programme

The Master of Public Health is a full-time one-year programme. It provides a first semester of theoretical training consisting of basic courses in epidemiology, study design, biostatistics and data-analysis, followed by more specific courses dealing with population health status, public health research, public health policy and management, and health promotion. The second semester consists of courses organized around concentrations: such as international health, health management and intervention, and occupational and environmental health. Within the domain of one of the concentrations a final paper is written under the guidance of a personal tutor.

Summerschool MSc programmes

The NIHES provides the opportunity to obtain a Master of Science in epidemiology or clinical epidemiology degree in three summers primarily based on courses in the Erasmus Summer Programme. Participants may combine short theoretical modules in the Erasmus Summer Programme in three consecutive summers in addition to modules from a full-time NIHES Master curriculum. This Master of Science curriculum consists of four visits to Erasmus University: three visits during consecutive summers, and 1 visit during a spring semester. The first visit of in total 6 weeks includes the introductory courses of the Erasmus Summer Programme and an additional 3-week module on Study Design. The second and third visit of 4 weeks each will be focused on the intermediate and advanced courses in the Erasmus Summer Programme. During the fourth visit in the

spring semester participants will follow short courses on specific advanced topics in epidemiology.
The further conduct of a research project under shared guidance in the home institution will enable participants to qualify for a Master degree.

The NIHES has formed an exchange programme with the New England Epidemiology Institute. The Summer School Master of Science in Epidemiology or Clinical Epidemiology may be obtained by attending one of the summer schools in the Epidemiology Summer Program at the New England Epidemiology Institute. All other courses for degree fulfillment may be obtained from the NIHES at Erasmus University.
Students wishing to apply for exchange with the New England Epidemiology Institute must first enroll in the NIHES Summer School programme.

For a full brochure on the postgraduate programme of the Netherlands Institute for Health Sciences, including detailed information about de Summer School Programmes, please contact:

Ms. Soeja de Groot
Course secretary Netherlands Institute for Health Sciences
Room Ee 2122

Erasmus University Medical School
PO Box 1738
3000 DR Rotterdam
The Netherlands
Phone : +31 (0)10 408 8288/7099
Fax : +31 (0)10 436 5933
E-mail : nihes@nihes.fgg.eur.nl
Internet : http://www.eur.nl/fgg/nihes

The Erasmus Summer Programme is hosted by Erasmus University Rotterdam, The Netherlands. The Erasmus University Medical School is one of the larger centers of medical research and teaching in Europe. It reflects the spirit of Rotterdam, a city with a great contrast between a modern part built after the Second World War and a 16th century part called 'Delftshaven'. Since 1945, Rotterdam has gradually developed into one of western Europe's major industrial and distribution centers. It is the largest seaport in the world today.

Fees

Fees are based on participation per week. Participants may choose freely from the courses offered. Accommodation is provided for by the Information Centre for International Relations (ICIR) in the International House of Erasmus University, which can only be reserved for 3 weeks. The International House offers student apartments consisting of 2 separate single rooms with shared kitchen and sanitary facilities. Hotel Inntel is situated at walking distance from the Erasmus University Medical School. Enrolment fees include all materials of the course(s) as well as participants' lunches and dinners from Monday to Friday.

Cancellations

If you have registered by sending back the signed applicationform and are unable to attend, a substitute delegate is welcome at no extra charge. Please be sure that he or she can present identification and a letter from the registered participant. Cancellations must be sent in writing to Office for Post Graduate Medical Education.

For cancellations postmarked before July 1, 1998, a service charge of Dfl 150,- will be due. For cancellations postmarked after July 1, 1998, no refund will be possible and the tuition fee will remain due payable.

Deadline for Application

Application is possible only by returning the signed application form before June 1, 1998. Applications received after this date cannot be garanteed. A down payment of Dfl 1000,- is required before July 1, 1998. If the down payment is not booked in our account before July 1, 1998, all reservations (at the hotel and/or at the Erasmus International House) will be cancelled and participation in the chosen courses cannot be garanteed any longer.

	Tuition fee	Tuition fee including accommodation in Erasmus International House	Hotel Inntel
1 week	Dfl 2250		Dfl 115 per night per person
2 weeks	Dfl 2750		
3 weeks	Dfl 3250	Dfl 4000	

Payment

Payment is possible:
- by enclosed bank cheque;
- by money order payable to the Office for Post Graduate Medical Education, Erasmus University Rotterdam, account no. 49.69.70.933, ABN/Amro Bank Rotterdam;
- Visa, Master or EuroCard.

On receipt of the application form a letter of confirmation and an invoice will be sent to the participant.

Maximum number of courses

Due to the intensity of the courses, the organizers strongly recommend registering for a maximum of 3 courses in one week, 5 courses in two weeks, and 6 courses in 3 weeks. For those interested, syllabi of other courses are available at Dfl 15,- each.

Meals

Lunches and dinners are included in the tuition fee. This does not hold true, however, for the weekends during which the courses will not be held. Participants are therefore expected to make arrangements for lunches and dinners on Saturdays and Sundays. Please note that on Friday the restaurant of the Erasmus University Medical School closes at 16:00 hrs.
Breakfasts are not included in the tuition fee nor in the hotelprice.

Certification

Participants who successfully complete the Erasmus Summer Programme will receive the official Erasmus Summer Programme Certificate. The certification party will take place on Thursday, August 27, 1998.

Social programme

A special social programme has been organized for the enjoyment of participants. A welcoming reception will be held in the first week for all participants and faculty. On both Sunday, August 16 and Sunday, August 23 there will be a social event. An informal dinner will be given for participants and faculty in the second week. On Thursday, August 27 a farewell party will be given for participants and faculty, during which the certification ceremony will take place.
Except for the welcoming drink a small financial contribution will be charged for the social events. You can register during the programme for all events at the registration desk.

Practical points

The Netherlands has a maritime climate. The average temperature in August is 20∞C or 70∞F. The currency used in The Netherlands is the Dutch guilder (Dfl), for which the exchange rate is approximately $1 = Dfl 2.00.

Organization and further information:

Ms. Marie Louise Bot
Office for Post Graduate Medical Education
Erasmus University Medical School
PO Box 1738
3000 DR Rotterdam, The Netherlands
Phone : +31 (0)10 408 7881
Fax : +31 (0)10 436 7271
E-mail : secr@paog.fgg.eur.nl
Internet : http://www.eur.nl/fgg/paog/esp

Faculty

Anders Ahlbom, PhD
professor of Environmental Medicine
Karolinska Institute, Stockholm, Sweden

David G. Clayton
senior lecturer in Biostatistics
MRC Biostatistics Unit, Cambridge, England

Eddy K.A. van Doorslaer, PhD
professor of Health Economics
Erasmus University Rotterdam, The Netherlands

Cornelia M. van Duijn, PhD
associate professor of Epidemiology
Erasmus University Rotterdam, The Netherlands

Diederick E. Grobbee, MD PhD
professor of Clinical Epidemiology
University of Utrecht, The Netherlands

Louise J. Gunning-Schepers, PhD
professor of Social Medicine
University of Amsterdam

Peter Heutink, PhD
assistant professor of Clinical Genetics
Erasmus University Rotterdam, The Netherlands

Holly Hill, MD PhD
professor of Biostatistics
The Rollins School of Public Health
Emory University, USA

Michael Hills, PhD
senior lecturer in Biostatistics
London School of Hygiene and Tropical Medicine, England

Albert Hofman, MD PhD
professor of Epidemiology
Erasmus University Rotterdam, The Netherlands

Myriam Hunink, MD PhD
professor of Epidemiology
University of Groningen, The Netherlands

Job Kievit, MD PhD
professor of Surgery
University of Leiden, The Netherlands

Paul Kind
senior research fellow
University of York, England

Niek Klazinga, MD PhD
associate professor of Social Medicine
Erasmus University Rotterdam, The Netherlands

David G. Kleinbaum, PhD
professor of Biostatistics
The Rollins School of Public Health
Emory University, USA

Deirdre van der Kuip, MD PhD
research coordinator
Erasmus University Rotterdam, The Netherlands

Stanley Lemeshow, PhD
professor of Biostatistics
University of Massachusetts, USA

Jacobus Lubsen, PhD
professor of Clinical Decision Sciences
SOCAR, Nyon, Switzerland

Johan P. Mackenbach, MD PhD
professor of Medical and Social Determinants of Public Health
Erasmus University Rotterdam, The Netherlands

Olli S. Miettinen, MD PhD
professor of Epidemiology, Biostatistics and Medicine
McGill University, Montreal, Canada

Bertram Müller, MD PhD
assistant professor of Clinical Genetics
Ludwig Universitat, München, Germany

Ben A. Oostra, PhD
associate professor of Clinical Genetics
Erasmus University Rotterdam, The Netherlands

Frans F.H. Rutten, PhD
professor of Medical Technology Assessment
Erasmus University Rotterdam, The Netherlands

Lodewijk A. Sandkuijl, MD
consultant in Clinical Genetics
Erasmus University Rotterdam, The Netherlands

Theo Stijnen, PhD
associate professor of Biostatistics
Erasmus University Rotterdam, The Netherlands

Bruno H.Ch. Stricker, MD PhD
associate professor of Pharmaco-epidemiology
Erasmus University Rotterdam, The Netherlands

Jan G.P. Tijssen, PhD
professor of Clinical Epidemiology
University of Amsterdam, The Netherlands

Wynand P.M.M. van de Ven, PhD
professor of Health Insurance
Erasmus University Rotterdam, The Netherlands

The Erasmus Summer Programme

Application form

ERASMUS UNIVERSITY ROTTERDAM

(This form is not applicable for participants of the NIHES-programmes. Please contact the NIHES-office!)

(please write in capital letters)

Last name _____ First name _____ Prof / Dr / Mr / Ms / Mrs

Initials _____ Date of Birth _____ Nationality _____

Mailing address _____

City _____ Zipcode _____ Country _____

Telephone _____ Telefax _____

E-mail _____

Please tick the course(s) you wish to attend

Week 1: August 10 - August 14, 1998	Week 2: August 17 - August 21, 1998	Week 3: August 24 - August 28, 1998
❑ Principles of Research in Medicine and Epidemiology	❑ Regression Analysis	❑ Survival Analysis
❑ Introduction to Data-analysis	❑ Methods of Clinical Research	❑ Advanced Study Design
❑ Clinical Decision Analysis	❑ Methods of Public Health Research	❑ Advanced Statistical Models in Epidemiology
❑ Meta-analysis	❑ Molecular Genetics for Clinicians and Epidemiologists	❑ Genetics of Complex Diseases
❑ Introduction to Health Services Research	❑ Genetic Epidemiology	❑ Pharmaco-epidemiology
❑ Introduction to Public Health	❑ Health Economics	❑ Medical Technology Assessment
❑ Epidemiology for Clinicians	❑ Advanced Medical Decision Analysis	❑ Public Health Bridging Research and Practice
	❑ Conducting Epidemiologic Research	❑ Design, Conduct and Analysis of Clinical Trials
		❑ Epidemiology and Health Policy

Please indicate which accommodation arrangement you wish (please tick)

Duration of stay	No accommodation	Room in Erasmus International House	Room in Hotel Inntel
1 week	❑		Day of Arrival _____
2 weeks	❑		Day of Departure _____
3 weeks	❑	❑	

The undersigned hereby declares to have taken notice of the payment and cancellation conditions of the Erasmus Summer Programme.

Date _____ Signature _____

Please return this form to:
Mrs. Marie Louise Bot, Office for Post Graduate Medical Education,
Erasmus University Medical School, PO Box 1738, 3000 DR Rotterdam, The Netherlands,
Phone: +31 (0)10 408 7881, Fax: +31 (0)10 436 7271, E-mail: secr@paog.fgg.eur.nl, Internet: http://www.eur.nl/fgg/paog/esp