

34 Community-oriented primary care

This chapter is written for practitioners of primary health care (doctors, nurses, health educators, managers and others) who try to 'treat the community as a patient' by appraising the health needs of a population and establishing programmes to deal with these in a systematic way, as well as caring for the needs of its individual members or their families.

This kind of integrated practice, which has been termed *community-oriented primary care (COPC)*,¹ requires the systematic collection and use of information as a basis for the planning, implementation, monitoring and evaluation of these community health programmes. The community orientation is expressed in a cyclic process (see Fig. 34.1), analogous to the examination—diagnosis—treatment—follow-up—reassessment cycle in the care of a patient. In this cycle, activities are continuously influenced by epidemiological and other information—what may be called an 'evidence-based'² approach. Without this use of information, a community orientation is likely to remain a well-meaning aspiration rather than a means of effecting demonstrable improvements in health. Studies of population health, it has been said, 'can be both the alpha and omega of health care by being the vehicle for both the discovery of need and the evaluation of the outcome of care and treatment.'³

A distinction is made in Figure 34.1 between a preliminary examination aimed at 'getting to know' the community and deciding which of its health problems merit detailed study and possible action, and a more detailed investigation ('community diagnosis') of selected problems. If a convincing case for action is revealed, these explorations lead to the development of an appropriate

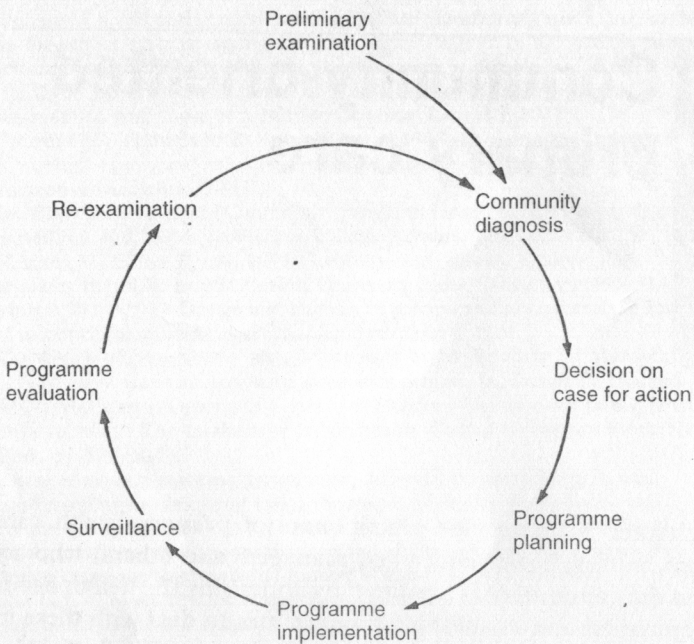


Fig. 34.1 The COPC cycle

programme or programmes. Subsequent monitoring of programme implementation, surveillance of changes in the community's status, and systematic evaluation of the programme permit re-examination of the situation, leading to decisions about the continuation or modification of the programme and about new issues for study or action.

COPC programmes (which have been called '*emphasis programmes*')⁴ can deal with selected health problems of the whole population served or of defined subgroups, and may involve health promotion, primary or secondary prevention, curative, alleviative or rehabilitative care, or any combination of these activities. They may focus on specific disorders or specific risk or preventive factors, may involve individual counselling or clinical care, group or community health education, and other activities, and may require community action or inter-agency co-operation.

The prime purpose for which information is collected to COPC is to promote the health of the individuals and community served by the practice, by developing intervention based on the answers to what Kark has called the cardinal questions of community medicine:⁵

- What is the state of health of the community?
- What are the factors responsible for this state of health?
- What is being done about it by the health care system and by the community itself?
- What more can be done, what is proposed, and what is the expected outcome?
- What measures are needed to continue health surveillance of the community and to evaluate the effects of what is being done?

The information-collection process can also serve to promote community development and the community's involvement in its own care, which may be defined as aims of COPC. Meetings with community leaders, designed to learn their opinions about health problems and their solutions (see Ch. 20), can stimulate interest and promote community action, as can surveys and feedbacks of survey findings (using meetings, newsletters, local broadcasts, etc.). Community self-surveys can be especially fruitful in this regard.

Studies in a COPC framework can also provide generalizable new knowledge. There are opportunities for research on, for example, the aetiology, natural history and care of disorders handled in the primary care context, growth and development, and the effects of family processes and psychosocial factors on health and health care. Also—and this is possibly the most important research challenge facing COPC practitioners today—COPC itself can be evaluated; how feasible are specific kinds of COPC programmes in different populations and different health care systems? how effective are they in comparison with non-community-oriented care? what is their extra cost? and what hospital or other costs do they save?

This chapter will discuss the application in COPC of the principles and techniques described in previous chapters, with which the reader is now assumed to be familiar. (If not, return to Square 1.) Consideration will be given to the definition of the community, the preliminary examination ('getting to know the community'), community diagnosis, evaluation, and some aspects of data collection in COPC.

DEFINING THE COMMUNITY

The community may be easy or hard to define. Its definition is easiest if the COPC practice cares for the residents of a specific

neighbourhood (whether or not they constitute a true community in the sociological sense), workers in specific places of employment, children in specific schools, or other specific groups. People registered as potential users of the services of a given general practitioner, group practice, neighbourhood health centre or health maintenance organization may also be regarded as a 'community' for whose welfare the practice is responsible. Definition is most difficult where there is no defined responsibility for a specific population; in such instances the aggregate of people who seek care, or those who have sought care recently, or those who seek care repeatedly, or some defined group of them, may be regarded as the 'community' for COPC purposes. A family physician who does not have a list of registered patients might define his 'community' as all the members of families of which any single member is an active patient.⁶

However defined, this community—the *target population* for health care—is the study population for survey purposes. The criteria for inclusion require clear formulation. If the community is defined geographically, decisions are required about the inclusion of transient residents, such as migrant seasonal labourers and their families, and expectant mothers or ill people who come to live with relatives.

Information may be required about the target population as a whole or (for specific purposes) about defined subgroups for whom programmes are contemplated or provided, such as infants and their parents, people with a specific disease, or specific high-risk groups. Samples are sometimes used (see Ch. 8 and p. 344), but sampling is obviously an unsatisfactory technique in surveys that aim (as do many surveys in COPC) not only to obtain information at a group level, but also to identify individuals who need care, with a view to offering them this care. If the community is too large to be studied accurately, one approach is to start data collection in an 'initial defined area' and then gradually expand this defined segment.⁷

In addition to this prime definition of the community as the target population for whose health care the practice is responsible, it may sometimes be decided to designate the community of which the members of the target population (or a large number of them), form a part, as a study population. If a COPC practice serves part of the population of a town, for example, it may be decided also to seek information about the town as a whole, in order to learn about available facilities and services, environmental hazards, patterns of

leadership and communication, and other relevant 'ecological' factors, and to find census and other easily accessible data that can be applied (even if with reservations) to the target population. This extension may also permit the collection of information required for the planning and evaluation of programmes, e.g. health education projects, that are not restricted to members of the practice's target population, but in which the practice participates.

GETTING TO KNOW THE COMMUNITY

A general descriptive picture of the community can serve several purposes, the main ones being to identify health problems that merit detailed study and possible action (a 'needs assessment')⁸ and to learn about their possible causes and the resources and circumstances that may be relevant to their solution. Getting to know the community and its problems is unquestionably a first step; but it is a continuing process, often slow and gradual, and not a one-time transitory activity. Subsequent stages of the COPC process are generally started as soon as they have a sufficient basis, without waiting for a full community picture.

The preliminary examination of the community generally makes use of 'rapid' methods (see Ch. 31), using easily available sources and qualitative research procedures (see p. 166). A search may be made for published reports and ready-made statistics concerning the target population or its area of residence, based on data collected locally or on small area analysis⁹ of information collected at a broader regional or national level. Discussions may be held with community members and professionals (see Ch. 20) concerning their interests and concerns and their perception of the community's problems and ways of solving them. In addition, easily available clinical and administrative records—especially the practice's own records—may be gathered and analyzed in order to obtain information about the use of services, reasons for attendance, infant growth patterns, causes of hospitalization, mortality and its causes, etc. In drawing conclusions from these analyses it is usually necessary to consider the effects of selection bias, the lack of standardized criteria and methods, incomplete recording, and other shortcomings of the data. A household health survey is sometimes practicable, especially if the COPC practice is a new one, when the survey can also serve to introduce the public to the services offered to them. Home visits provide an excellent opportunity for

becoming acquainted with the community, as does direct observation in the field ('using the five senses and touring the community's streets, houses, workplaces, parks, schools, restaurants, stores and service institutions').¹⁰ Use of a combination of these methods is recommended.¹¹

It is important to obtain information about the size and demographic characteristics of the population. Not only is this an essential basis for the calculation of disease rates and other community health indices, but it carries its own implications for health and health care. Even the simplest of data, concerning only the population's age and sex distribution, may be of help in planning the allocation of resources. It may be important to appraise mobility; if there is much flux in the population, this will have obvious implications for the planning of services.

Demographic information may be available from the registration system used by the practice for administrative or fiscal purposes, from other records (e.g. an age-sex register) maintained as a routine in the practice, or from official sources (national census, population register, school registers, etc.). If not, a basic demographic survey may be required; this is often combined with a health survey. Sometimes the best that can be done is to use estimates derived from census data for a broad area that includes the practice population, or (by extrapolation) from information about the patients who use the service in a given period.¹²

Consideration should be given to the establishment of a register of the target population, which may be useful not only as a basis for analyses but as a sampling frame and as a tool for use in the provision of care—for example, as a checklist for identifying elderly people or infants who are not receiving care. Maps may also be helpful.

'Getting to know the community' is a preliminary stage, in the sense that it must start before the 'community diagnosis' stage can commence. But the latter more intensive (and selective) investigation can start as soon as there is sufficient information to permit this, while the 'getting to know' process continues in parallel with other stages of the COPC cycle, and merges into the surveillance stage in which the community picture is updated both by continued use of the methods of the preliminary description phase and by special procedures such as the reporting of births and deaths and other demographic changes.

No rules can be laid down concerning the scope of the community appraisal. This must obviously depend on the COPC practice's

focus of interest and its resources. A case can be made for the routine collection of a standard set of basic data, but the major part of the data should be selected to meet the practice's specific requirements.

The checklist in Appendix A (p. 403) may be helpful. It is not presented as a blueprint for a study, but as a reminder of topics that may be thought relevant.

COMMUNITY DIAGNOSIS

In the context of COPC, the community health diagnosis provides detailed information about selected health problems and their determinants, and can be narrow in its scope, often dealing with only a single subgroup of the population or with a single topic. The topic or topics are generally chosen on the basis of the preliminary examination of the community, but may also be expressions of a national or institutional health policy, not based on findings in the specific community. The community diagnosis may be descriptive, analytic, or both.

The community diagnosis has three main purposes. It permits a decision on the case for action directed at specific problems (is a community programme justified?), it helps in the planning and implementation of programmes, and it provides baseline data for the measurement of changes produced by programmes. The required study procedures may also serve the needs of patient care more directly; a prevalence survey, for example, can identify individuals who need care, providing a register of cases for use as a framework for the organization and monitoring of a programme.

The community diagnosis may include qualitative elements, especially to provide a basis for the *case for action*, which depends on the importance of the problem, the feasibility of intervention, and the likelihood that intervention will be effective. An appraisal of the importance of the problem sometimes requires detailed epidemiological data on its extent (incidence, prevalence) and impact (e.g. complications, disability, mortality) in the specific community, but it may be obvious without such data. If the problem is regarded as important, the decision on whether a programme is justified will depend largely on information about the community's felt needs and demands and its readiness and capacity to participate in the programme, prevalent attitudes and practices relevant to health care, and the nature and extent of the care presently

given. Information on the use and availability of time, manpower and other resources, and the published results of evaluative studies of care procedures and programmes tested elsewhere also play an important part in decisions about the case for intervention.

One way of bringing these elements together so as to permit comparisons of alternative programmes for dealing with the problem, or of programmes to handle competing problems, is to compute a priority score.¹³ This is the sum of ratings allotted to different elements, such as:

- a. The *relative importance* of the problem: 1, low; 2, moderate, 3, high. This rating is based on the nature, extent and impact of the problem, and is founded both on the epidemiological picture in the community and on general knowledge about the effects of the disorder or risk factor under consideration.
- b. The *feasibility and cost* of intervention: 1, low feasibility and/or high cost; 2, intermediate; 3, high feasibility and low cost. This rating is based on practical considerations, such as cost, the availability of trained and interested personnel, facilities and other resources, and the possible participation of volunteers or community bodies or other agencies.
- c. The *predicted effectiveness* of intervention (should it be implemented): 1, ineffective; 2, moderate; 3, very effective. This rating is based both on an appraisal of local factors that may influence effectiveness (the community's interest, probable compliance, etc.) and on the results of evaluative studies elsewhere.

Despite the arbitrary features of such a score (subjectivity of ratings, equal weight given to each component), it serves to emphasize that the presence of a problem is not in itself enough to warrant intervention at the community level.

The other purposes of the community diagnosis necessitate more detailed epidemiological investigation. This may include measurement of the occurrence or distribution of the disease (or other problem under consideration) and its known risk and protective factors and risk markers, the identification of groups requiring special care because of their high risk or prevalence of disease or complications, a high case fatality rate, poor access to care, poor compliance, poor use of services, etc. Consideration may be given to causal relationships—specifically, what is the importance in this community of the various known causes of the disorders under consideration? (but a creative mind may also find opportunities for

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research into new causes). The community diagnosis may include measures of impact on bed disability, time lost from work, etc., as well as attributable, prevented or preventable fractions. The diagnosis may include the identification of *community syndromes*,¹⁴ i.e. sets of associated diseases or other health characteristics that are causally interrelated or have shared or related causes. It may be more effective or efficient to design a programme to handle such a syndrome as a whole, rather than dealing separately with each component.

If the problem under consideration is hypertension, for example, the community diagnosis might include answers to the following questions: What are the frequency distributions of systolic and diastolic pressures in the community? What is the prevalence rate of hypertension? How does it vary in different population sub-groups? How common are complications? What contribution do hypertension and hypertension-related diseases make to mortality? How strong is the association with overweight in this community? How prevalent is overweight? What are the community's attitudes to hypertension and overweight? How many of the hypertensives smoke cigarettes, or have other risk factors for coronary heart disease? What proportion of the community has been screened for hypertension? How many of the known hypertensives are under treatment? Do they take their medication? How many are under adequate control? Do people with borderline hypertension have regular blood pressure checks?

The value of the community diagnosis is generally enhanced if it includes appraisal of the care currently given, asking such questions as: What services are available? How adequately are they used? What are the current care procedures? What is the quality of care? How effectively is the problem prevented or treated?

To provide a useful baseline for the subsequent measurement of change, and hence for appraising the effectiveness of intervention, the minimal requirement is information on the incidence or prevalence of the diseases or other problems at which the programme is directed. Adequate outcome evaluation may be difficult or impossible if appropriate initial data are not available. In order to permit a process evaluation (is the programme running well?—see p. 59) it is also advisable to include measures that will provide baselines for appraising the attainment of the programme's activities and intermediate goals (see p. 374).

In COPC, community diagnosis is often a slow and gradual process, based as it generally is on information continuously collected

in the clinical situation, supplemented from time to time by surveys performed outside this situation. If the population is small it may be necessary to cumulate several years' experience before satisfactory data, especially on mortality and disease incidence, are available. Moreover, some studies—e.g. of predictors of mortality in the COPC population—are intrinsically long-term. At some point, however, usually sooner rather than later, it is decided that enough information is available to permit the planning and introduction of an intervention programme. This does not halt the process of community diagnosis, which merges imperceptibly into the phase of health surveillance. During this phase, continued appraisal of specific problems and monitoring of the operation of specific community programmes are combined with ongoing general surveillance (broad or narrow in its scope) of the community's health and health care, designed to detect and measure changes in the community's health status and its exposure to risk and protective factors.

EVALUATION

In COPC, evaluation is always motivated by concern with the welfare of the specific community served. This kind of evaluation, aimed mainly at determining whether the programme is running well and whether outcomes are satisfactory, is what we have called a *programme review* (see p. 27). Evidence may also be sought that the outcomes can be attributed to the intervention (rather than to other factors), using an experimental or quasi-experimental design (see Ch. 33). This may require study of a control population as well. If a programme trial is contemplated, it is usually wise to attempt to reduce bias—or accusations of bias—by obtaining the assistance of impartial independent co-investigators and (for data obtained outside the ordinary clinical context) of independent observers.

The evaluation may embrace the COPC practice as a whole, or it may be limited to a specific programme or programmes, or to specific aspects of programmes. All the basic evaluative questions listed on page 56 may be asked. Questions about the process and outcome of care usually focus on the performance of the activities and the achievement of the goals specified in the plan of the intervention programme. The scope of the inquiry may vary from simple monitoring procedures (Are people with borderline hypertension having regular blood pressure checks? Are hypertensive patients taking their medication?) through a fuller evaluation

including the measurement of immediate outcomes and the detection of obvious undesirable effects (What proportion of the known hypertensives have been brought under control? How many of the patients treated with hypotensive drugs complain of impaired sexual functioning?) to a comprehensive appraisal that may include the measurement of long-term outcomes (Have the frequency distributions of systolic and diastolic pressures or the prevalence of hypertension in the community changed? Has the incidence of stroke or other defined complications fallen?).

Real-time information about activities and intermediate outcomes may be useful as a trigger for immediate corrections to the intervention plan and the way it is implemented, and as a basis for prompt reports to the community. An evaluation of community health promotion programmes has shown that feedbacks on the immediate impact of a programme (without waiting to measure long-term changes) can stimulate the development of partnership with the community.¹⁵

Programmes that aim to change community behaviour can be expected to extend over a long period (marathons rather than sprints),¹⁶ and the evaluation of such programmes, or any evaluation that measures long-term outcomes, will be a long-term affair, fusing with the continuing surveillance of changes in the community picture.

For practitioners with a crusading interest in the extension of COPC, the importance of evaluative studies cannot be over-emphasized. Pleading for a 'vibrant and compelling data base with which to make a case for COPC', Rogers¹⁷ has pointed out that it may not be enough to demonstrate effects on mortality or morbidity rates. 'Such statistics ... lack immediacy and emotional impact ... A community or a nation will willingly and instantly spend millions to rescue a trapped coal miner ... but it is much harder to get that same community or nation to spend similar sums to reduce infant mortality rates ... As with olives or oysters, a taste for vital statistics is an acquired one.' He suggests that new yardsticks, such as measures of the restoration of crippled people to full functioning, may be needed to excite compassion and interest.

DATA COLLECTION IN COPC

The collection of information that is accurate enough to be useful for epidemiological purposes is far from easy, and a COPC practice

ordinarily has limited resources to devote to this task. Attention should therefore be concentrated on data that are of obvious relevance to the practice's needs. There is no point in creating a database that is a cemetery for the interment of useless information, even if some of it will occasionally be exhumed for annual reports or other ritual observances. While the collection of some routine 'basic data' may be considered, the data set should in the main be custom-made to meet the practice's specific needs, particularly those related to its community health programmes.

Data collection in COPC has special features because of the clinical context. First, information is collected to fulfill a double function, meeting the practice's dual responsibilities for individual and community care. When a baby is weighed or a disease is diagnosed—whether in the course of ordinary clinical care or in a special survey—the result may be used both in caring for the individual and at a group level. An audit of records of the performance and results of investigations and the provision of specific advice and other care procedures may provide a basis for decisions both about individual patients and about the overall programme. Secondly, a good deal of the information needed for community diagnosis and surveillance and programme evaluation can be collected in the course of clinical care, either as part of the ordinary diagnostic investigation and surveillance of patients, or by adding tests and questions to clinic procedures for epidemiological purposes. In a practice where periodic health examinations are conducted, these provide an especially useful opportunity for the collection of such information.

The use of clinical data for epidemiological purposes demands methods that are no less rigorous than those in any epidemiological study, and this may not be easy to achieve. The information to be analyzed should be as valid and complete as possible. Careful preparations are needed. Operational definitions of diseases and disabilities should be standardized (especially if diagnoses are made by more than one clinician), at least for the conditions selected for epidemiological study; for these it may be wise to record the presence or absence of each diagnostic criterion, to permit ongoing or spot checks of conformity with the definition. Standardized procedures should be laid down for the collection of data, especially if questions are asked or examinations done by more than one person. Written instructions are desirable, documenting the procedures and operational definitions, especially if there are frequent changes of personnel. Record forms should be convenient to use, and permit easy retrieval of data for the

purposes of analysis; the use of personal computers in the clinic may facilitate the epidemiological use of clinical data. Quality control procedures and tests of validity and reliability should be instituted where necessary; even simple checks on the completeness of recording may yield startling findings.¹⁸

The integration of epidemiological data collection into a clinical context has both advantages and disadvantages. It provides opportunities for doing elaborate tests, for asking questions about delicate matters, and for long-term follow-up. But it may also produce bias. Not only may patients seeking care not be representative, but their illness or apprehension may affect their responses or measurements, and they may tend to give answers they think their health advisers expect. Moreover, observations may be biased by the clinician's prior knowledge of the patient (see 'halo effect', p. 166); this bias may be reduced by the use of standardized objective measures and by making measurements (say of blood pressure) without first referring to the patient's previous values.

Bias caused by the nonrepresentativeness of patients is likely to diminish in time, as more and more of the target population attend. In some subgroups coverage may become so high that the bias can be ignored; this may occur with infants and their mothers, pregnant women, the elderly, and hypertensives or other groups for whom periodic health examinations or special care programmes are organized. Often, however, there is a need for supplementary survey procedures; nonattenders may be identified and invited to attend, or visited at home, or asked to respond by mail or telephone.

The information required in COPC may be collected not only in the clinical situation, but by any appropriate and practicable method. It may be obtained by special surveys, conducted in the clinic context or outside it. These may range in scope from a small follow-up study of a group of patients to a comprehensive community health survey. A community survey can provide information that clinical records cannot or do not; it can appraise the health status and needs of people who have not sought care, can measure the use of other health services by the practice population, and may provide the COPC practice with a considerable amount of new information about its patients.¹⁹ Response rates are generally high in surveys performed by or under the auspices of a COPC practice that has a good relationship with the community.

Feedback of the results to the community can be regarded as an important element of a community health survey—which takes us

full circle, back to the opening sentence of this book: 'The purpose of most investigations in community medicine ... is the collection of information that will provide a basis for action ...' And how can this be done better than by stimulating the community itself to take the action required to improve its health?²—in accordance with the principle of the WHO 'Health for All' policy²⁰ that

Health for all will be achieved by people themselves. A well informed, well motivated and actively participating community is an element for the attainment of the common goal.

NOTES AND REFERENCES

1. The concept and practice of *community-oriented primary care* are described by Kark S L 1981 (The practice of community-oriented primary care. Appleton-Century-Crofts, New York); Kark S L, Abramson J H (eds) 1981 (Community-focused health care. Israel Journal of Medical Sciences 17: 65); Abramson J H, Kark S L 1983 (Community oriented primary care: meaning and scope. In: Connor E, Mullan F, eds. 1983 Community oriented primary care: new directions for health services delivery. National Academy Press, Washington, D C, pp 21-59); Connor E, Mullan F 1983 (see above); Nutting P A (ed) 1987 (Community oriented primary care: from principle to practice. Health Resources and Services Administration, Public Health Services, Washington, D C); Abramson J H 1988 (Community-oriented primary care—strategy, approaches and practice: a review. Public Health Reviews 16: 35); Kark S L, Kark E, Abramson J H, Gofin J (eds) 1994 (Atencion primaria orientada a la comunidad [APOC], Ediciones Doyma S A, Barcelona); Tollman S, Friedman I 1994 (Community-orientated primary health care—South African legacy. South African Medical Journal 84: 646); Gillam S, Plamping D, McClenaham J, Harries J, Epstein L 1994 (Community-oriented primary care. King's Fund, London); Nevin J E, Gogel M M 1996 (Community-oriented primary care. Primary Care 23: 1), and Gillam S, Miller R 1997 (COPC—a public health experiment in primary care. King's Fund, London).
COPaCetic, a semiannual newsletter about COPC trends, is available free from the Department of Family Medicine, Case Western Reserve University School of Medicine, 10900 Euclid Avenue, Cleveland, Ohio.
2. The 'evidence' used in COPC includes not only information about the community, but also the results of epidemiological studies and programme trials conducted elsewhere, as cited by, for example, Blackburn H 1997 (Epidemiological basis of a community strategy for the prevention of cardiovascular diseases. Annals of Epidemiology 7: S7).
3. Acheson R M, Hall D J 1976 Epilogue. In: Acheson R M, Hall D J, Aird L (eds) Seminars in community medicine, vol 2: Health information, planning, and monitoring. Oxford University Press, London, pp 145-164.
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