

Is Community-Oriented Primary Care a Viable Concept in Actual Practice?

An Affirmative View

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Community-oriented primary care (COPC) is a viable concept in actual practice for the simple reason that it has been practiced for many years (in fact, long before the name COPC was invented) by many pioneers of family practice. Sir James McKenzie's studies of the pulse and cardiac arrhythmias in the late 19th century, Will Pickles' study of the epidemiology of infectious diseases in the 1930s, Curtis Hames's studies of hypertension and cardiovascular disease in Evans County, Georgia, during the 1950s to 1970s, and Julian Tudor Hart's studies of hypertension in a small village in Wales are all examples of community-oriented primary care. Contemporary examples exist also in the United States, including the Crow Hill Family Practice,¹ Dr. Leif Solberg's work with smoking cessation in Minneapolis,² and Tri-County Family Medicine in Dansville, New York.

The real question and controversy is: Is community-oriented primary care generalizable to more than a few dedicated physicians? Can and should the average family physician understand the principles of COPC and apply them to his or her daily practice? I believe the answer is yes.

The principles of COPC were first popularized by Kark³ (actually Kark uses the term community-oriented primary health care, C-OPHC) and were elaborated in this country by Nutting⁴ and a major study by the Institute of Medicine.^{1,5}

COPC requires three essential components: (1) a primary care practice, (2) a defined population, and (3) a process by which major health problems of the community are addressed. These components and such additional terms as epidemiologic skills, community involvement, and the denominator problem can, at first glance, seem

quite intimidating to the harried physician, perhaps reading this paper at midnight on a Friday evening while attending an obstetric patient.

Physicians should not be scared by the jargon. COPC can be done at many levels and can be added in increments to the practice. The only absolutely essential component without which nothing will happen is the interested and motivated physician.

The following examples describe some of the COPC activities that have occurred in our own practice at Tri-County Family Medicine. They include several types of problems with varying levels of sophistication in process and methods, and illustrate some of the many ways COPC can be incorporated into practice. None of these activities was conceived of as a COPC project. In fact, none of the participants had even heard of COPC until recently. As mentioned earlier, COPC is really only a refinement and conceptualization of a style of practice that has been occurring for many years.

Tri-County Family Medicine, located in rural western New York state, was created in 1972 as a joint response by physicians, the local hospital, and the Dansville community to a medical disaster. The old hospital, an antiquated building with a staff of six older general practitioners, had been condemned by the State of New York. Money had been raised for a new hospital, but several physicians and community members realized that without new physicians it would be an empty hospital. They approached the family medicine residency at Highland Hospital in Rochester, New York, directed at that time by Dr. Eugene Farley, for help.

It was decided to form a nonprofit community-directed practice, which would then be eligible for National Health Service Corps physicians. One of the younger community physicians agreed to use his practice as the nucleus for the group. A volunteer community board of directors was formed to run the organization. Four National Health Service Corps physicians were with the group at different

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times. Two have remained following their corps commitment. An age-sex registry⁶ and E-book⁷ for diagnostic coding were included from the start because Farley and Jack Froom at the Rochester family medicine residency said it would be good for the practice and wanted the data.

Several smaller communities around Dansville (populations between 750 and 2000 persons) were also without physicians. They agreed to provide facilities if Tri-County would provide physicians. Eventually a central office and four satellite offices with a staff of six family physicians and three physician's assistants evolved from these beginnings.

In the COPC context the first problem was easy to identify: lack of adequate primary care. No sophisticated study was needed. The defined population was the communities involved and the hospital service area. The process involved creating a new structure for primary care by joint cooperation between the physicians and communities with outside assistance from Highland Hospital Family Medicine and the National Health Service Corps.

The second COPC initiative involved migrant health. Project Reach, a federally funded program to aid migrant potato pickers, was active in the community. Their data and experience showed inadequate health care to be a major concern. Project Reach approached Tri-County Family Medicine to provide twice-weekly evening migrant health clinics. Federal funding was obtained for partial support. Project Reach and the local public health nurses provided transportation, outreach, and follow-up for the migrants while Tri-County Family Medicine provided facilities and manpower for the clinics. This program continued for about ten years, until the migrant pickers were largely replaced by machines.

A third initiative involved the personal interest of one of the physicians (Dr. Norman Wetterau) in problems of drug and alcohol abuse, especially among teenagers. The magnitude of the problem was apparent from regional and national secondary sources as well as local experience and concerns of parents. Dr. Wetterau was instrumental in helping form parent support groups at each grade level from grade 6 through grade 12 in the school system. Rules for chaperoning parties were established. Parents were encouraged and sometimes taught to call party hosts, inquire whether the party would have adult supervision and be alcohol free, and offer their services to help chaperone. Other activities such as creating drug-free and alcohol-free social activities were part of the program.

Prevention in clinical practice has long been an interest of the author. In 1980 a chart audit of a sample of Tri-county Family Medicine patients showed only 58 percent of active patients (defined as patients seen at least twice in the past two years) were receiving recommended health maintenance procedures. A strategy of educational and

organizational changes with periodic spot audits to reinforce compliance was developed. Two years later a follow-up audit showed that compliance with recommended screening procedures had improved to 72 percent.⁸ This project received some design and statistical assistance from the University of Rochester, but no outside funding.

A subsequent study⁹ used the practice diagnostic coding system to identify all patients diagnosed with cancer during the previous ten years in the Cohocton satellite office. The age-sex registry showed this practice to be comparable to the United States population distribution. The impact of screening on the diagnosis of preventable cancers was evaluated. A major result of the study was that although 80 to 90 percent of active patients in the practice were involved in the screening program, 53 percent of preventable cancers were diagnosed in persons who were not involved or were noncompliant with screening. A medical student from the University of Rochester on a summer research elective was the senior author on this study. Statistical assistance was provided by the Department of Family Medicine. These results are raising other important questions for further study. Who are the inactive patients in the practice population, and how does one get them involved in health maintenance?

In this paper the definition of a primary care practice will be restricted to that which depends on revenues from patient visits for its financial viability. This definition includes for-profit and not-for-profit fee-for-service practices as well as prepaid health maintenance organizations. It excludes practices supported by government or other third-party funding, not because such practices cannot or do not practice COPC, but because their different financial constraints make them less relevant to the situation of most practicing physicians.

Defining the population cared for is a prerequisite of COPC and a missed opportunity for many family physicians. Health maintenance organizations have the luxury of an exact list of members. Fee-for-service physicians rarely, even in rural areas, care for an entire community. The combination of an age-sex registry and a diagnostic coding system based either on ICHPPC* or ICD-9** codes gives physicians a fair idea of the age and sex distribution of their patients as well as the problems the patients present. That most practices do not maintain diagnostic coding systems was pointed out by Sullivan¹⁰ in a report on the sales of E-books, the most prominent manual diagnostic coding system in family practice. He states that in 1973 about 200 E-book systems were sold, and sales have

* *International Classification of Health Problems in Primary Care*

** *Ninth Revision-International Classification of Diseases*

decreased since then. Many practices may have adopted computerized systems, but these data indicate that in the 1970s most practices did not have diagnostic coding systems. Nutting¹¹ provides a useful definition of the practice community as "all family members of active patients." This definition, however, requires that in addition to an age-sex registry of active patients, family data must be kept. Furthermore, some of these patients will actually be cared for by other physicians and not see themselves as belonging to the practice at all.

In fee-for-service practice it is usually not possible to have an exact count of the entire practice population. Active patients can be arbitrarily defined by the physician as anyone seen within a specified period. The practice community, as described by Nutting, is a broader measure but will falsely include people who do not consider themselves part of that practice.

Fortunately, COPC usually does not require an exact denominator for the entire practice. The population denominator will vary depending on the COPC problem being addressed. In the first Tri-County example the denominator was the hospital service area and the communities surrounding Dansville. In the second example the denominator of migrant farm workers was defined by an outside agency. The third example used school-aged children, easily identified by the school rosters as the target population. The fourth example used an arbitrary definition of "active patients" to look at health maintenance compliance. The last example used patients with a diagnosis of cancer, obtained from the diagnostic coding system, as the denominator. What all these examples have in common is that health concerns of a specified group larger than a particular patient or family are being addressed.

The first step in the process of COPC is identifying community health problems. Sometimes these will be obvious, such as, "We don't have any doctors." They may be identified by community or outside sources, as was the case with the migrant health situation. Frequently they may require the generation of primary data by slightly more sophisticated techniques such as the practice audits used to identify physician compliance with health maintenance procedures or patients presenting with cancer. It should be stressed that practice audits can be done only if diagnostic coding information is available.

The second step in the COPC process is developing one or, at most, a few areas of emphasis. The area of emphasis should be of interest to the physician and be important. Any project contemplated should be feasible. COPC areas of emphasis tend to snowball as results from one endeavor point out new problems and areas of unmet needs. This phenomenon can be a source of considerable personal growth for the physician. He or she becomes a relative expert in that particular area.

The last step in the COPC process is monitoring the impact of the intervention. Epidemiologic and statistical skills may be needed, especially, as in the last two examples, when the work is being submitted for publication. Persons with these skills can be found at outside sources, notably a nearby medical center department of family medicine or preventive medicine. Many COPC projects, such as the first three examples, require much less sophisticated follow-up or evaluation. Large sample sizes and statistical analyses are not necessary to measure results in most situations. Often a repeat audit of the initial problem provides evidence of change.

All of the COPC examples mentioned started with one or more physicians. Community involvement varied from indirect to dominant. All the initiatives, except the community drug and alcohol intervention, had some degree of outside help, ranging from the advice and assistance of Farley and his department in starting the group, to simple statistical consultation on some of the later projects. Only one project, the migrant clinics, involved significant amounts of outside funding. Outside money is not necessary for COPC. In fact, if one waits for outside funding, there is a good chance nothing will happen.

Money and its equivalent, time, are the most pressing problems of the would-be COPC practice. Madison¹² states that "professing a community orientation means rejecting the procedure-oriented, fee-schedule consciousness that is characteristic of many physician entrepreneurs." Some subsidy for COPC is needed and usually is more easily obtained from the practice than from outside sources.

Would-be COPC physicians should first develop the basic tools of an age-sex registry and a manual or computerized diagnostic coding system. They should then take a critical look at their interests and resources. They should consult with colleagues in practice or academia and with community members and friends. Periodic practice audits can be a fertile source of ideas and an evaluation tool. When a project is decided upon, it should be feasible and be chosen because it is important and interests the physician investigator. Other needed skills can be bought, borrowed, or learned.

None of these steps is beyond the abilities of any competent, caring family physician. It will be necessary to set some difficult priorities. For example, it may be necessary to close the practice to new patients so that a better job can be done caring for those already in the practice.

COPC describes a structure at the individual practice level for critically looking at what health care needs are not being addressed, evaluating those needs relative to current medical practice, and deciding how things can be improved. If this concept is not viable for most family physicians, family medicine as an intellectual discipline is in serious trouble.

References

1. Institute of Medicine: Community Oriented Primary Care: A Practical Assessment, Volume II, The Case Studies. Washington, DC, National Academy Press, 1984
2. Solberg LI: Implementing a tobacco cessation program in clinical practice. *Med Times* 1988; 116:119-124
3. Kark S, Kark E: An alternative strategy in community health care: Community-oriented primary health care. *Isr J Med Sci* 1983; 19:707-713
4. Nutting PA (ed): Community-Oriented Primary Care: From Principle to Practice. Health Resources and Services Administration (Rockville, Md). HRSA publication No. HRS-A-PE86-1. Government Printing Office, 1987
5. Institute of Medicine: Community Oriented Primary Care: A Practical Assessment, Volume I, The Committee Report. Washington DC, National Academy Press, 1984
6. Farley ES, Treat DF, Baker CF, et al: An integrated system for the recording and retrieval of medical data in a primary care setting: Part 1. The age-sex register. *J Fam Pract* 1974; 1(1):45-46
7. Froom J: An integrated system for the recording and retrieval of medical data in a primary care setting: Part 3. The diagnostic index E-book. *J Fam Pract* 1974; 1(2):45-48
8. Frame PS, Kowulich BA, Llewellyn AM: Improving physician compliance with a health maintenance protocol. *J Fam Pract* 1984; 19:341-344
9. Berner JS, Frame PS, Dickinson JC: Ten years of screening for cancer in a family practice. *J Fam Pract* 1987; 24:249-252
10. Sullivan RJ: Morbidity recording by E-book in community practice. *J Fam Pract* 1981; 12:758-760
11. Nutting PA: Population-based family practice: The next challenge of primary care. *J Fam Pract* 1987; 24:83-88
12. Madison DL: The case for community-oriented primary care. *JAMA* 1983; 249:1279-1282

An Opposing View

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There is considerable interest in academic and public health circles in community-oriented primary care (COPC). Limited data are available to document the effectiveness of COPC in certain clinical settings. From Zululand to the Indian Health Service to inner-city Baltimore, COPC has been implemented enthusiastically and been shown to improve certain health outcomes.¹⁻³

A precise definition of COPC is elusive. A recent Institute of Medicine report⁴ defines COPC as the provision of primary care services to a defined community, coupled with systematic efforts to identify and address the major health problems of that community through effective modification in both the primary care services and other appropriate community health programs.

How does COPC work? Essentially, the physician or other clinician identifies a defined community, rather than the individual patient, as the object of care. Then, an assessment of the health care needs of the community is done, followed by development of a plan of action to address the most important health needs. This plan of action is then implemented, sometimes with active community involvement, sometimes by the health care providers themselves. Two factors that have been identified as particularly influential in determining the success of COPC projects have been the involvement of a health care professional, usually a physician, who strongly believes in the efficacy of the COPC model, and a financial base for the clinical operation that can support the COPC programs unlikely to be economically self-sufficient.

There remain three principal obstacles to the widespread implementation of COPC in the United States: (1) Lack of persuasive evidence that COPC can broadly im-

prove health outcomes in nonpoverty populations, (2) lack of physician interest in the COPC approach resulting from educational deficits in the United States medical education system, and (3) widespread economic and organizational barriers to COPC. Unless all three of these obstacles can be overcome, future applications of COPC in the United States will remain very limited.

LACK OF EVIDENCE THAT COPC IS EFFECTIVE

There are some data that suggest an impact of COPC on selected health outcomes. The Polela Health Center in Zululand was effective in improving the nutritional status and reducing the infant mortality rate of its target community.¹ Gordis³ documented reduced rates of rheumatic fever in patients receiving care at inner-city neighborhood health centers in Baltimore. Data from neighborhood health centers^{5,6} and from the Indian Health Service^{2,7} suggest the effectiveness of COPC-style care in improving perinatal outcomes, although these data are ecological and uncontrolled. An unpublished controlled study suggests greater impact of a rural neighborhood health center than other sources of care in improving hypertension control in a defined community.⁸

Other studies are inappropriately cited to support the effectiveness of COPC in improving health outcomes. For example, large clinical trials that enrolled patients through primary care centers and evaluated such patient outcomes as hypertension control do not, in fact, provide reliable

data on the impact of primary care centers on hypertension control. Nor does it necessarily follow that a program that improves process of care will also improve health outcome.

Still other studies are so poorly designed that the data cannot be usefully interpreted. Studies that compare frequency of diarrhea before and after an intervention, but that fail to take into account seasonal variation in baseline rates of diarrhea, are an example of this problem.⁹

No convincing US data exist that test the effectiveness of COPC compared with fee-for-service practice in altering lifestyle, improving health practices, or reducing risk-taking behavior. There are ecological data from Israel¹⁰ and from the Indian Health Service¹¹ that suggest the potential effectiveness of COPC in some of these areas. Such data are important, since many of the US national health objectives depend upon modification of risk-taking behaviors, such as smoking, dietary habits, alcohol abuse, drug use, and sexual practices, which place individuals at risk for certain adverse health outcomes.

In summary, available data suggest that the effectiveness of COPC is limited to a narrow spectrum of diseases and health practices. Nearly all reports of the effectiveness of COPC in improving health outcomes are limited to either low-income medically underserved populations or to populations served by coordinated national systems of care. No data exist to show a positive impact of COPC among patients whose baseline health status is relatively good and who have adequate access to fee-for-service care.¹² No data exist that assess costs involved in delivering COPC relative to costs of other systems of delivering care.¹³

Physicians and policy makers would be appropriately skeptical of the usefulness of any new preventive health intervention or pharmaceutical agent if the evidence presented in favor of the new agent or method were incomplete, uncontrolled, and largely ecological. Such is the case with COPC. Currently, published data to support the efficacy of COPC are tentative and incomplete, except for low-income populations. Thus, there is little reason to expect practicing physicians or policy makers to recommend broad application of the COPC concept in the United States at present. No matter how intuitively appealing the concept of COPC might be to certain individuals, it would be premature to endorse the concept uncritically at this time. More data are required to either accept or reject the utility of this concept in the nonpoverty US population.

LACK OF PHYSICIAN INTEREST IN COPC

There seems to be less physician interest in COPC than ever before.¹⁴ Should COPC be shown to be effective, great success might be achieved with widespread and enthusiastic physician endorsement of the concept. But such

endorsement has not occurred. Except for a few isolated voices crying in the wilderness, physicians as a group have largely turned their backs to COPC. Why?

Few primary care physicians have been trained to do COPC. To do COPC well requires a working knowledge of epidemiology and a fundamental awareness of how environmental, cultural, behavioral, and political factors influence health. Skills in community diagnosis, community organization, and community health education are needed. US medical schools do not train physicians well in these areas. In fact, many of these areas have been delegated to schools of public health, thus ensuring that they remain outside mainstream medical education. Many health professionals are well trained in the principles of COPC, but very few physicians are among them. Residents in primary care tracks could be encouraged to add a year of public health training, or medical students could do five-year Doctor of Medicine-Master of Public Health programs. Individuals who have successfully combined traditional clinical roles with a broader community focus should be recruited as teachers of medical students and residents.

Recent trends in the supply and distribution of primary care physicians also work against widespread physician involvement in COPC. Since 1965, while the number and geographic distribution of subspecialists have increased dramatically,¹⁵ there has been a 27 percent decline in the total number of urban office-based primary care physicians, and a 45 percent decline in the number of urban office-based primary care physicians working in poverty areas.¹⁶ The increasing scarcity of primary care physicians in such communities means that those who are practicing in those communities are more likely than ever to be fully occupied with the concerns of daily practice and to have little time or energy to devote to looking at the defined community of COPC.

ECONOMIC AND ORGANIZATIONAL BARRIERS TO COPC

Economic and organizational barriers limit the participation of both patients and physicians in the COPC process. Primary care physicians are less well paid than their subspecialist colleagues, and medical education leaves a majority of medical school graduates with sizable debts. Recent medical school graduates are documentably more interested in high personal incomes than were the graduates of a decade ago, and fewer are choosing careers in primary care.¹⁷ At present the physician cannot be reimbursed for many COPC-related activities. Thus, there is a strong economic disincentive to physicians to develop COPC practices. This problem has been recognized for primary care in general, and some concrete proposals for change are under consideration.¹⁸

The competitiveness, diversity, and lack of coordination that characterize patient care in the United States medical care system¹⁹ make application of COPC a practical impossibility for most practicing physicians. What would happen if a physician in a suburban community identified the residents of a neighborhood (or the students at its schools, the community-dwelling elderly, or the workers at one factory) as the defined community that will be the object of his or her care? Very likely the residents of the community would be unwilling to abandon their established, typically fragmented patterns of seeking medical care and respond warmly to the overtures of the COPC-oriented physician. Furthermore, other physicians in the community would be alarmed at the prospect of losing some of "their" patients and would likely respond defensively to the situation.

The success of some gatekeeper and staff-model health maintenance organizations demonstrates that coordinated care can be brought to some segments of the community. Within such a framework, COPC has a chance to develop. To this date, however, the only populations that have clearly benefited from COPC are (1) participants in certain well-coordinated nationalized systems of health care, and (2) previously underserved low-income populations such as reservation-dwelling Native Americans and inner-city residents who seek care at community health centers. In the pluralistic, fee-for-service US health care system, the defined communities that are at the heart of COPC are very difficult to bring into focus. Major reform of the US health care system would be prerequisite to effective and widespread application of the COPC model. The economic and political debate engendered by such reform leaves the future implementation of COPC in the United States very much in doubt.

THE FUTURE CHALLENGE TO COPC

The COPC concept is at least 40 years old, and has not been proven effective except in some coordinated national health care systems and among some low-income populations in the United States and elsewhere. Furthermore, there is a remarkable lack of physician interest in the concept, and serious economic and organizational obstacles hinder its implementation.

Today, however, is an era of innovation and experimentation in the health care sector. As paradigm shifts occur, only imagination limits future possibility.²⁰ In such a milieu, COPC-style care may yet evolve into a form that meets new needs and offers both providers and patients new and attractive possibilities in health care. Innovative physicians should experiment with COPC in an effort to adapt the COPC model to evolving economic, political, and administrative realities rather than being tightly bound by past approaches, definitions, and constraints. Innovations have been proposed^{5,21} and should be further

encouraged if evaluation demonstrates an ability of new structures to improve health outcomes.

References

1. Cassel JC: A comprehensive health program among South African Zulus. In Paul B (ed): Health, Culture, and Community. New York, Russell Sage Foundation, 1955:15-42
2. Rhoades ER, D'Angelo AJ, Hurlburt WB: The Indian Health Service record of achievement. Public Health Rep 1987; 102:356-360
3. Gordis L: Effectiveness of comprehensive care programs in preventing rheumatic fever. N Engl J Med 1973; 289:331-335
4. Institute of Medicine: Community-Oriented Primary Care: A Practical Assessment. Volume I. The Committee Report. Washington, DC, National Academy Press, 1984
5. Institute of Medicine: Community-Oriented Primary Care: A Practical Assessment. Volume II: Case Studies. Washington, DC, National Academy Press, 1984
6. Chabot A: Improved infant mortality rates in a population served by a comprehensive neighborhood health program. Pediatrics 1971; 47:989-994
7. McDermott W, Deuschle KW, Barnett CR: Health care experiment at many farms. Science 1972; 175:23-31
8. O'Connor PJ, Wagner EH: Hypertension control in a rural community. Read before the Cardiovascular Epidemiology Session of the American Public Health Association 113th Annual Meeting, Washington, DC, November 20, 1985
9. Nutting PA, Strotz CR, et al: Reduction of gastroenteritis morbidity in high-risk infants. Pediatrics 1975; 55:354-358
10. Kark SL, Abramson JH (eds): Community-focused health care. Isr J Med Sci 1981; 17:2-3
11. Robertson LS: Community injury control programs of the Indian Health Care Service: An early assessment. Pub Health Rep 1986; 101:632-637
12. Nutting PA: Community-oriented primary care: A promising innovation in primary care. Pub Health Rep 1985; 100:3-4
13. Nutting PA, Wood M, Connor EM: Community-oriented primary care in the United States: A states report. JAMA 1985; 253:1763-1766
14. Conner E, Nutting PA: Community-Oriented Primary Care: New Directions for Health Services Delivery. Washington, DC, National Academy Press, 1983:123-24
15. Schwartz WB, Newhouse JP, Bennett BW, Williams AP: The changing geographic distribution of board-certified physicians. N Engl J Med 1980; 303:1032-1038
16. Kindig DA, Movassaghi H, Dunham NC, et al: Trends in physician availability in 10 urban areas from 1963 to 1980. Inquiry 1987; 24:136-146
17. Colwill JM: Directions. Read before the 21st Annual Conference of the Society of Teachers of Family Medicine, Baltimore, Md, April 26, 1988
18. Roper WL: Perspectives on physician-payment reform: The resource-based relative-value scale in context. N Engl J Med 1988; 319:865-867
19. Relman AS: The new medical-industrial complex. N Engl J Med 1980; 303:963-970
20. Freymann JG: The public's health care paradigm is shifting: Medicine must swing with it. J Gen Intern Med, in press
21. Mullan F: Rethinking public ambulatory care in America. N Engl J Med 1987; 316:544-547

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