

facilities, their accessibility and their quality is a concern of community genetics (Harris and Reid 1997). Genetic education, genetic screening, pre-pregnancy consultation, genetics in primary care, and genetics for disadvantaged people all presuppose that there are answers to difficult questions and for genetic diagnosis which can be easily found.

### 7. Monitoring

Monitoring of the population with regard to genetic and congenital diseases, but also for unwanted potential side-effects of the use of medical genetics, e.g., insurance problems, is desirable. Monitoring can be done by continuous registration or periodic surveys. When timely detection of sudden changes in frequencies are of interest, continuous registration is preferable. Periodic surveys, however, in general are less expensive. A problem with registers of congenital anomalies is the relative rareness of many of the disorders. This limits the statistical power of individual registries. Power may increase by joining international networks, such as the European Registration of Congenital Anomalies (EUROCAT) or the International Clearinghouse of Birth Defect Registries (ICBDR) (Reefhuis et al. 1999).

### 8. Conclusion

Community genetics is a multidisciplinary field. It differs from clinical genetics by its community orientation. It is not population genetics or genetic epidemiology. Population genetics and genetic epidemiology serve to increase our understanding about the behavior of alleles in populations and the contribution of genes to disease. Both fields produce information that is extremely important for community genetics. Community genetics applies this knowledge, together with the contributions from clinical genetics, psychology, sociology, educational experts, law, ethics, patient organizations (Kent 1999), and the community.

The term 'community genetics' is a new one, first mentioned in literature in the 1990s (Modell and Kuliev 1998). Separate community genetic activities, however, have a longer history. The term is useful since it gives a clear label for a coherent field within the universe of health care. It helps to delineate clinical genetics and it conveys a positive answer to those who express fear for eugenic tendencies and genetization. This answer is: 'Yes, it is possible to apply genetics to the benefit of the community by serving the individuals in it, without intention to improve the gene pool or the health of future populations.' This is one of the reasons why the name community genetics should be preferred above the term 'public health genetics' (Khoury et al. 2000). The other reason is that classical outcome measures in public health are uptake, compliance, and

reproductive choices. Community genetics prefers to measure outcome in terms of improvement of autonomy, empowerment of people, perception of benefit, decrease of harm, and increase in justice.

*See also:* Epidemiology, Social; Genetic Counseling: Historical, Ethical, and Practical Aspects; Genetic Screening for Disease-related Characteristics; Genetic Testing and Counseling: Educational and Professional Aspects; Mental Illness, Epidemiology of; Mental Illness, Genetics of; Public Health; Public Health as a Social Science; Schizophrenia and Bipolar Disorder: Genetic Aspects

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## Community Health

Although the term 'community health' is used frequently in health-related textbooks, scientific articles, and publications of international organizations, pre-

cise definitions of 'community health' are hard to come by. The term is often not clearly distinguished from related terms such as 'community medicine,' 'community health care,' 'preventive medicine,' or even 'public health.' Nevertheless it is possible to identify essential elements in the general concept of community health which are common to most uses and which differentiate 'community health' from traditional biomedical and individual-based approaches to health. This article reviews the uses of the term 'community health' in the health field, discusses common themes implicit in its use, and summarizes some of the ways the concept has been reflected in recent research and practice.

### *1. Multiple Uses of the Term 'Community Health'*

Perhaps because the term was originally adopted in the medical field, it has often been used to refer primarily to health services provided in the community (for example in community health centers or by means of health visitors) as opposed to more traditional institutional settings such as hospitals. Early on it was also used to refer to the provision of health services by the community (i.e., through services organized and funded by the community itself, rather than through the mechanisms of traditional private medical practice), especially services intended to prevent or control the spread of disease and attend to the 'medically indigent.'

Other uses of the term community health have been much broader. The term community health or community health care has also been used as a synonym for the community-oriented primary care movement pioneered by the work of Sydney Kark in South Africa in the 1940s and 1950s (Kark 1981). Community-oriented primary care involved the provision of health care in geographically defined communities through a coordinated system of community health centers. However, it was conceived as much broader than the simple provision of health services in or by the community. The approach included community participation and organization, a multidisciplinary and team practice, a broad approach to the determinants of ill health including social and cultural together with biological factors, and built in monitoring, evaluation, and research (Susser 1999).

Community health (or community health care) has also been used as a synonym for another imprecisely defined term, community medicine, which emerged in the 1960s in the United States as part of a general movement in academic centers towards 'community-based approaches' to health care. Community medicine was defined as the assessment of health needs and provision of health care to defined population groups as distinct from the prevailing system based on the individual

patient. It implied the provision of both curative and preventive services as well as the use of epidemiologic techniques in assessing the needs of population groups, in setting priorities and in the assessment of the results achieved (Lathem 1976). The community medicine movement was associated with the creation of departments, centers, and programs in community medicine (or community health) in many universities. Although multidisciplinary teams were sometimes emphasized, community medicine was clearly conceived as a domain or subspecialty of the medical profession. In Great Britain, the term community medicine was officially established in the early 1970s as a distinct medical specialty and defined as a branch of medicine concerned with populations or groups rather than with individual patients, requiring special knowledge of epidemiology, organization and evaluation of medical care, and the medical aspects of health service administration.

The term community health (and community health promotion) has also been used to refer to the local, collaborative efforts of the public and private sectors in the prevention and treatment of disease. This perspective highlights the participation not only of the medical profession and allied health professions but also of schools, families, workplaces, and the public sector (Green and Ottoson 1999). Key characteristics of this use of the term are notions of local diagnosis and action as well as intersectoral and collaborative approaches between public and private partners. This conception distinguishes community health from traditional clinical practice on one hand (which focuses on the individual patient) and from population health (or public health) on the other hand (which focuses on the population as a whole).

Although sometimes distinguished from 'population health' because of its focus on local diagnosis and action, community health has also been used to refer to the health of populations generally. In this sense the term is synonymous with modern uses of the term public health. Originally 'public health' was sometimes used to refer to health services provided by governmental agencies or to government prevention campaigns (such as vaccinations) and environmental interventions (such as sanitation). More recently, however, public health has been used more broadly to refer to 'the combination of sciences, skills, and beliefs that is directed to the maintenance and improvement of the health of all the people through collective or social actions' (Last 1995).

### *2. Common Themes Underlying the General Concept of 'Community Health'*

Despite the many different and often imprecise uses of 'community health' in the literature, it is possible to trace several underlying themes implicit in its use. The first concerns how health and disease are concep-

tualized: health is a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity (WHO 1978). In addition, health and disease are perceived as extremes of a continuum of health states, rather than as dichotomous categories. The consequences of this conceptualization of health and disease are that interventions to improve health should include not only the diagnosis and treatment of disease (usually emphasized in traditional medical practice) but also health promotion and disease prevention activities.

A second theme refers to the determinants and causes of ill health. Community health approaches take a broad view of the causes of ill health—including not only those emphasized by traditional biomedical approaches such as individual susceptibility, individual exposures to disease-causing agents, and health behaviors (e.g., smoking, drinking, diet, and exercise), but also characteristics of the physical and social environments of the places where people live and work. Health and disease are therefore no longer thought of as matters exclusively (or even predominantly) of individual characteristics or individual choice, but rather as conditioned by broader social and economic forces which affect the resources that individuals have and constrain the choices that they can make. For this reason community health approaches often emphasize intersectoral approaches to health promotion and disease prevention and treatment. Improving health requires not only traditional health care interventions (early detection, diagnosis and treatment) but also health education (e.g., through health promoters, the school system, or mass communication), interventions on the physical environment (e.g., sanitation, pollution reduction, improvement of recreational spaces), reorganization of work (reduction in exposure to noxious physical or chemical environments, improvement of the psychosocial work environment), and even economic and social policy interventions. Thus a community-health approach requires collaboration of the traditional health sector and public health agencies with many other sectors.

A third characteristic of community health which stems directly from the recognition of the multiple causes of disease is the emphasis on a multidisciplinary approach to the study of health problems and to their solution, bringing together not only traditional health practitioners (such as doctors and nurses) and biological scientists, but also public health practitioners, epidemiologists, health educators, and social scientists. Community health integrates personal health services with environmental, health policy, and social policy approaches, and draws on both quantitative and qualitative research.

A fourth underlying theme in community health emphasizes the importance of local determinants and local action. While recognizing society-wide determinants of health, the importance of local determinants, and the need for local needs assessment, local

decision making, local priorities, and local action is stressed. The emphasis on local diagnosis and action is closely linked to the importance of local control and the need to recognize the specificities of communities in both assessing needs and designing and implementing interventions.

A fifth characteristic is the key importance of community participation, that is the active involvement of the community in all stages of the community health process, including identification of health needs, establishment of priorities, development and implementation of interventions, and evaluation of their effects. Community participation implies more than sporadic consultation with community leaders or participation of community members in the implementation of interventions. It requires direct involvement of the community, its representatives or its institutions in all aspects of the decision making process. However, the importance of community participation, and the extent to which true participation in the decision-making processes has actually existed in community health programs, has been the subject of much debate.

Finally, and perhaps most importantly, use of the term community implies recognition of the construct of community, or more generally of populations, as fundamental in understanding the causes of ill health. However community is defined, there is implicit recognition of the role of social interactions and social organization in shaping the attitudes of individuals and the choices that they make. The determinants of ill health can be conceptualized not only at the individual-level but also at the population, group, or community level. This notion is in stark contrast to the dominant paradigm in medicine where methodological individualism and the idea that disease itself and all its determinants are best conceptualized and measured at the individual-level is paramount. Thus, interventions can be targeted at communities themselves (as well as at community organizations or institutions), rather than focusing on individuals as is done in traditional medical practice. Another key idea that distinguishes the community health approach from that of traditional medical practice is that the object of study (and intervention) is not only the individual patient but also the community or population. Thus the practice of community health requires the ascertainment of health problems and needs not only in individuals but also in communities or populations.

### 3. *The Concept in Recent Research and Practice*

Many of the underlying themes of community health have appeared in health-related research and in health care and public health practice over the past few years. Three research-related areas in which elements of the community health paradigm have emerged are the investigation of community-level determinants of

health, the evaluation of community interventions (community intervention trials), and the notion of 'community-based' research. In public health practice, community health themes have formed the basis of the primary health care approach and have recently emerged in some aspects of the healthy cities and healthy municipalities movements.

### 3.1 Community-level Determinants of Health

The 1990s saw an increasing empirical investigation of community-level determinants of health and the extent to which community characteristics are related to health over and above the effects of individual-level factors. Research on community effects is part of a resurgence of interest in the group-level, macrolevel, or ecological determinants of health. It is related to a larger critique of the dominant paradigm in health research which implicitly assumes that all disease determinants are essentially individual-level attributes (Duncan et al. 1998, Diez-Roux 1998). Recent empirical investigations of community effects on health have focused on geographically-defined communities or neighborhoods. For example, a series of studies have now documented a relation between neighborhood socioeconomic context and health outcomes, including mortality, disease prevalence, and health behaviors (e.g., Haan et al. 1987, Davey Smith 1998, Robert 1999). These associations often persist after controlling for the socioeconomic characteristics of individuals, suggesting that characteristics of areas or neighborhoods *per se* may be important to health.

The recent development of the statistical technique of multilevel analysis, which allows the simultaneous examination of group-level and individual-level factors (Duncan et al. 1998, DiPrete and Forristal 1994), has greatly stimulated empirical research in this field. However, there has been relatively little conceptualization or empirical examination of the specific features of areas that may be relevant or of the mechanisms involved (MacIntyre et al. 1993). Potential intervening factors may include the physical characteristics and resources of neighborhoods as well as features of their social environments. In addition, research in this field still faces important conceptual and methodological challenges before firm inferences can be drawn regarding the presence and relative importance of neighborhood effects (particularly with regard to the role of individual-level social position). These challenges include better definition and characterization of communities or neighborhoods, specification of their relevant features, elucidation of the processes through which neighborhood factors may operate, and examination of the ways in which neighborhood factors may interact with individual-level characteristics.

### 3.2 Community Interventions

Closely linked to the notion of community determinants of health is the idea that interventions to improve health and prevent disease may be more effective if they target communities rather than (or in addition to) the individuals within them. Although the importance of community interventions such as improved sanitation has long been a basic tenet of public health, the idea that interventions to prevent chronic diseases such as cardiovascular disease should also focus on the community level only emerged in the last two decades. The rationale underlying the need for community interventions is that many health-related behaviors (such as smoking, sedentary lifestyle, and diet) related to today's prevalent chronic diseases are promoted and maintained by the physical and social environments of communities. Thus, by addressing community environments directly, and by modifying prevalent social norms, community interventions may be more effective than traditional individual-based one-on-one approaches (Syme 1986). In addition, by targeting the entire community rather than just individuals above an arbitrarily defined 'high risk' cut off, community interventions have the potential for shifting the entire distribution of risk and thus preventing a larger amount of disease (Rose 1985). The community intervention approach represents a radical departure from the traditional clinical approach which focuses only on individuals at highest risk and 'decontextualizes' risk behaviors by ignoring their broader social determinants.

Community intervention trials or their variants have been conducted in a variety of settings over the past 20 years including geographically defined communities, workplaces, and school (Sorensen et al. 1998). Examples of the types of interventions implemented as part of community intervention trials include health education activities, mass media campaigns, education of health professionals, screening, physical activity programs, and labeling in grocery stores and restaurants. Although some community intervention studies for the prevention of cardiovascular disease have found significant effects (Puska et al. 1985), the empirical evidence of program effects in these studies is generally modest (Koepsell et al. 1995, Fortmann et al. 1995). The presence of society-wide trends that make it difficult to detect program effects, the relative absence of interventions at the structural, macro or policy level, and the lack of significant community participation may account for the mixed results of some of these community trials.

### 3.3 Community Participation and Community-based Research

Many of the ideas underlying the concept of community health are also expressed in what has been

termed 'community-based research' (or 'community-centered research') (Israel et al. 1998). A key characteristic of this approach is the explicit recognition of the concept of community as a fundamental category in public health research, where community 'is characterized by a sense of identification and emotional connection to other members, common symbol systems, shared values and norms, mutual, although not necessarily equal, influence, common interests and commitment to meeting shared needs' (Israel et al. 1998). The notion of community includes not only geographically defined neighborhoods (which may or may not qualify as communities under the previous definition) but also, for example, geographically dispersed ethnic groups with a sense of common identity. Key elements of community-based research include: (a) building on strengths, resources and relations that exists within communities as part of health research; (b) collaborative partnership and the active participation of community members and representatives in all aspects of the research process; (c) the reciprocal transfer of knowledge, skills, capacity, and power; (d) the integration of knowledge and action, and (e) a broad approach to the determinants of health including not only the characteristics of individuals but also community characteristics and broader structural factors. Although often noted as an ideal approach to research in public health, true community participation has been infrequently implemented in health research, so its impact has yet to be determined.

### 3.4 *The Primary Health Care and Healthy Cities/Communities/Municipalities Movements*

Many of the constituent elements of 'community health' were reflected in the 'primary health care' approach formalized by the World Health Organization in 1978 (WHO 1978), which drew in part on community-oriented primary care (Kark 1981). As defined by WHO, primary health care extends beyond the provision of basic health services or first contact clinical care to environmental, economic, and social interventions which may have an impact on health, and emphasizes community participation and the need to eliminate inequalities both between and within countries. Primary health care was put forward as the primary strategy for achieving the goal of health for all, and was adopted by the health sectors of many nonindustrialized countries. Elements of community-oriented primary care were also adopted in some industrialized countries as illustrated for example, by the community health center program in the 1960s in the United States (Sardell 1988). Themes of the 'community health' paradigm have also recently emerged in the Healthy Cities, Healthy Communities, and Healthy Municipalities movements initiated in Canada in the 1980s, and subsequently adopted in the

United States and by the Panamerican and World Health Organizations. Although the philosophical orientation, sponsors, and activities of these projects have varied substantially, they share the basic idea of challenging communities to develop projects to reduce inequalities in health and access to health care, and to develop healthy public policies at the local level through a multisectorial approach and increased community participation in health decision-making (Flynn 1996). They emphasize local government, decentralization, community involvement, and developing a broad range of strategies to address the social, environmental, and economic determinants of health. The evaluation of the effects of primary health care and related strategies on health outcomes is complex. Empirical studies are scarce, although there is some evidence that comprehensive and integrated approaches (such as those advocated by the primary health care movement) may be more effective and efficient in improving health overall than selective and vertical approaches (Taylor and Parker 1987).

### 4. *Limitations and Implications of the Concept of Community Health*

Ambiguities in exactly what 'community health' is intended to mean has led some to urge caution in the use of the term. For example, community health has often been associated with the organization and delivery of health care for the poor, despite the fact that it has been postulated as a framework for understanding the causes of ill health and a strategy for improving health in the population as a whole. The concept of 'community participation' has also been misinterpreted. For example, health education campaigns in the community, periodic gatherings with community members to inform them of ongoing activities, or even simply hiring community members for routine tasks at the health center has been taken as an indication of the 'participatory' nature of the program. There has been much debate around the concept of community participation itself, whether participation has been more than simply symbolic, and the extent to which it has been distorted, manipulated, and rendered rethorical (Ugalde 1985). The relationship between 'community health' and medical practice has also been contested. For example, despite formulations of the concept that emphasize the multiple determinants of health and the need for intersectoral approaches, community health has often been viewed as a branch or specialty of medicine, as clinical practice with a population or community base (where population or 'community' may refer simply to the group of patients that a particular medical practice sees).

The use of the term 'community' has also been problematic because 'community' is rarely precisely

defined, and has sometimes been used to refer to any group of persons. Moreover, the use of 'community health' in place of 'population health' or 'public health' has been criticized because the term 'community' conjures up ideas of consensus and equality (an idealized notion of community which may often not exist in reality), and in so doing may obfuscate the fact that population health (and public health) is strongly influenced by inequality (Popay 1996). It has also been argued that the use of 'community health' as opposed to 'public health' or related terms such as 'social medicine' has contributed to a desocialization and parochialization of the concept. The use of community medicine (or community health care) as a synonym of public health perpetuates the idea of public health as a subdivision of medicine rather than medicine as a subdivision of the broader public health (Anonymous 1985). Others have noted that by focusing on 'community' the concept emphasizes local action and shifts attention from the need to address larger scale social and structural determinants of health. The emphasis on decentralization in some formulations of the community health paradigm has not always been accompanied by true changes in decision-making power. In addition, it has often been associated with ideas of financial autonomy and self-sufficiency, sometimes with the intent of reducing government outlays, with potential consequences for the availability of resources at the local level and equity. In Latin America, the concept of 'collective health' which emerged in Brazil in the 1970s (*saúde coletiva* in Portuguese) has been used as an alternative to the terms 'public health' and 'community medicine,' reflecting a critique of the perceived biomedical reductionism and bureaucratization of the 'public health' and 'community medicine' approaches dominant in developed countries. The 'collective health' movement emphasized the social nature of the health-disease process, as well as the contribution of the social sciences (together with other disciplines) to knowledge and practice in the field (Silva Paim 1992).

### 5. Conclusion

Despite many ambiguities and reductionisms, the broadly defined philosophy of community health has been progressive in the health field because it recognizes the role of 'community' or more generally of interactions between persons in groups, social relations, and social organization in influencing people's health. Thus, it transcends the approach dominant in clinical medicine which reduces health and its determinants to a biological and individual phenomenon, and recognizes that each person is a member of multiple groups, communities, or populations (e.g., social classes, racial and ethnic groups, occupational groups, neighborhoods) and that characteristics of

these groups are crucial in shaping that person's health over and above his or her individual characteristics. Moreover, it emphasizes the need for a multi-disciplinary and intersectoral approach. Under the community health paradigm, the prevention of illness and death is no longer viewed purely as a matter of medical intervention, it is no longer a monopoly of doctors and health care providers. Health and disease are viewed not only as biological, but also as fundamentally social phenomena. Because of their recognition of the social and economic determinants of health, their concern with equity, and their strong emphasis on community participation, community empowerment, and community action, community health movements have been frequently linked to broader social movements, and to calls for social change and political action.

*See also:* Ecology and Health; Epidemiology, Social; Health Care Delivery Services; Health Education and Health Promotion; Health Interventions: Community-based; Public Health as a Social Science

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## Community Organization and the Life Course

Communities and, more specifically, neighborhoods are one of several central social settings that affect human development. Approaches to neighborhood theory and measurement are first reviewed, followed by a discussion of neighborhood effects on children and adolescents and on adults and the elderly. The article concludes by highlighting new directions for research, policy, and practice.

### 1. The Ecology of Human Development

A fundamental proposition of developmental science is that social contexts affect human development. Most theories on social contexts seek to identify which attributes of a single context are developmentally positive or negative. Most theories emphasize the composition and structure of a setting. While this approach is useful, it is limited in that it says little about the processes that have a more direct impact on individual development. For theories to be maximally predictive and generalizable, they must also address processes. This is especially important because some effective or ineffective processes may be more common in settings with certain compositional or structural characteristics. Ultimately, attention must also be paid to the ways in which multiple contexts jointly affect development during particular life periods and over the life course as a whole. The approach advocated here is therefore in line with recent advances in ecological, life-span, and life-course frameworks (for a review, see Settersten 1999). These frameworks emphasize the multiple proximal and distal settings in which development takes place, the connections between these settings, the proximal and distal processes that occur within them, and how these settings and processes change over time.

### 2. Theoretical Models of Neighborhood Effects

Neighborhood effects on physical, psychological, and social outcomes may be tied to the composition and structure of neighborhoods, the social processes that occur within them, or specific combinations of composition, structure, and process.

Several theoretical models have guided most inquiry in this area, namely contagion models, models of social disorganization, models of collective socialization, competition models, models of relative deprivation, and institutional models (see also Furstenberg and Hughes 1997, Mayer and Jencks 1989). These and other models need not be contradictory; indeed, they may be complementary.

'Contagion' or 'epidemic' models suggest that those exposed to neighbors who engage in negative behaviors will themselves be more likely to engage in similar behaviors (e.g., Crane 1991). In these models, the assumption is that neighborhoods of low socioeconomic status (SES) are characterized by more problematic behaviors. Presumably, this also extends to attitudes, beliefs, and values. The focus of these models has almost exclusively been on the contagion of negative phenomena, not positive phenomena.

Models of 'social disorganization' suggest that neighborhoods with high levels of social problems become disorganized, which in turn results in deviant behavior at the individual level (e.g., Skogan 1990). Recent work on 'collective efficacy' has advanced