

# Clinical Care and Health Disparities\*

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\* Dr. Barbara Starfield died suddenly on June 10, 2011, after this manuscript was sent to the *Annual Review of Public Health*. We missed her particularly while responding to reviewer comments. We hope we have kept the best of her ideas.

## Keywords

equity in health services and health, primary care, meeting health needs, adverse events, clinical guidelines, prevention

## Abstract

Health disparities, also known as health inequities, are systematic and potentially remediable differences in one or more aspects of health across population groups defined socially, economically, demographically, or geographically (88). This topic has been the subject of research stretching back at least decades. Reports and studies have delved into how inequities develop in different societies and, with particular regard to health services, in access to and financing of health systems. In this review, we consider empirical studies from the United States and elsewhere, and we focus on how one aspect of health systems, clinical care, contributes to maintaining systematic differences in health across population groups characterized by social disadvantage. We consider inequities in clinical care and the policies that influence them. We develop a framework for considering the structural and behavioral components of clinical care and review the existing literature for evidence that is likely to be generalizable across health systems over time. Starting with the assumption that health services, as one aspect of social services, ought to enhance equity in health care, we conclude with a discussion of threats to that role and what might be done about them.

## INTRODUCTION

Although disparities in health across different social groups have always existed (82, 83, 86, 87), scholarly interest was galvanized in 1980 by publication of a report commissioned by the Department of Health and Social Security in the United Kingdom, titled “Health Inequalities” (14). The term inequalities was used to characterize the poor relative health of socially and economically deprived populations. In 1983, the term inequities was applied to these differences to distinguish simple differences in access to health services from differences that were predictable and associated with unfairness (87). Since then, inequity has been considered to be a matter for concern and codified as “systematic and potentially remediable differences in one or more aspects of health across populations or population groups defined socially, economically, demographically, or geographically” (42, 88). More recently, inequity has been recognized as not limited to differences between the most deprived population group and the rest of the population, but, rather, to social gradients in which health is worse the more disadvantaged the population group is relative to the more advantaged (112).

In the United States, social inequalities are generally characterized as “disparities” and attention has focused primarily on racial and ethnic differences and gender differences (between males, females, lesbian, gay, and transsexual identity). Although some researchers have focused on problems of access to care, for example the need to stabilize Medicaid coverage (41, 76), there has been less attention to socioeconomic differences, immigrants, and other smaller population groups. Elsewhere, the focus has been largely on differences between poor and wealthy countries and, within countries, across social groups identifiable by material characteristics such as income, education, occupation, or immigrant status; the term inequity is often used to express a moral commitment to social justice (49).

In this review, we assume the validity of overwhelming evidence in the report of the

WHO Commission on Social Determinants of Health (112) that social gradients in health and access to health care are pervasive, and we move forward to discuss inequities in clinical care and the policies that influence them.

## WHAT IS KNOWN ABOUT EQUITY IN HEALTH ASSOCIATED WITH HEALTH SERVICES?

People in lower social strata have not only more illnesses, but also more comorbidity. Differences in health across the social strata are greater for severity of illness (including death, disability, and comorbidity) than for incidence of specific illness, thus indicating an important role for health services (37, 62, 84, 100).

Improving average health is not necessarily accompanied by reductions in inequity. Because new interventions often reach individuals in higher social strata first, there are early increases in inequity for morbidity and mortality. Standardized individualized interventions are less successful in improving equity in health because they are less successful in relatively deprived populations than in more advantaged populations (9, 61).

Influences conferring high relative risk of poor health are not necessarily appropriate targets for equity-focused interventions; if their frequency in the subpopulations is low, they will contribute very little to reductions in inequity overall (64, 103). Levine et al. (51) conducted an analysis of disease-, age-, gender-, and race-specific changes in mortality after three life-saving interventions were introduced between 1989 and 1996: active antiretroviral therapy (HAART), surfactants for neonatal respiratory distress syndrome, and Medicare reimbursement of mammography screening for breast cancer. These interventions resulted in increasing black–white disparities in mortality, but with marked variability across U.S. counties (51). Many other interventions that might be considered universally useful are inequitably applied. For example, although individuals in socially disadvantaged populations have greater cervical cancer mortality, they are less likely

to receive the human papilloma virus vaccine (10). However, programs can improve equity when designed to recognize threats to the socially disadvantaged (103, 107). Thus, introduction and support of new technologies must take into account how they will be applied and by which mechanisms they will diffuse in the population (27). To address this problem, Mulholland and colleagues (60) argue for implementation of programs of proven effectiveness first in areas of greatest need, such as was done in Peru with new childhood immunizations or in Brazil with the Family Health Strategy (see below). The Basque Region (Spain) initiated its children's dental program to address this issue, resulting in elimination of income-based and geographic inequities in decayed, missing, and filled teeth in both rural and urban areas, although they persist in Spanish regions without such programs (31). Another example of targeting to groups that have great needs for services is the continuous rehabilitation efforts in western Europe (Norway) compared with eastern Europe (Estonia): The long-term outcome after poliomyelitis is better in the former because the program improves the ability to work and lessens the need for disability pensions (73).

Educational attainment influences mainly those aspects of health that depend on knowledge, i.e., preventive health behaviors (7, 63, 72, 110). In a study comparing 31 developing countries, the likelihood of using modern contraception and attending four or more antenatal care visits is, respectively, 2.01 and 2.89 times higher for women with complete primary education than for those less educated (5). Individuals with more education respond more appropriately when confronted with potentially harmful pharmaceutical advertising than those in less educated groups (40). Also, education is significantly related to smoking quitline awareness and access to medical information (48). In schizophrenia, individuals with more formal education have better cognitive training response and adherence to treatment (98).

As socioeconomic deprivation increases, the relative difference in health outcomes

experienced by minority groups also increases (6). In the United States, there are marked differences in patterns of disparities, depending on the type of measure and characteristics of population subgroups. For example, among elderly Medicare recipients, black patients were more likely to be readmitted after hospitalization for acute myocardial infarction, congestive heart failure, and pneumonia, and this difference was more pronounced among hospitals that disproportionately care for black patients. [Racial differences are related to both patient race and the site where care is provided (46)]. In general, disparities in measures of effectiveness of clinical care are more consistent when the comparisons are by socioeconomic status rather than by race or ethnicity.

Countries that spend a greater proportion of government expenditures on health for the poor (compared with the rich) have much greater child survival than do countries with the same gross national product but that spend a greater percentage on the rich (analysis based on data in 18, 19, 49, 104). In seven African countries, the wealthiest one-fifth of the population receives well over twice as much financial benefit from overall government health spending as does the poorest fifth (30% versus 12%). For primary care, the rich/poor benefit ratio is much lower (23% versus 15%), indicating less inequity (36, based on 19).

Although little is known about the proportion of government expenditures spent on different population groups in most other countries, much is known about the equity effects of different types of health systems—in particular, the benefits of primary care-oriented health systems (89, 92). Provision of greater primary care resources has a larger effect on reducing mortality in more socially disadvantaged areas (92). Access to clinical care is also affected: The supply of primary care physicians (PCPs) in the United States is associated with greater equity in referral patterns for high-cost surgical procedures for African Americans (12). Increased PCP supply is associated with a much larger increase in odds of these admissions than for white admissions. An addition of one PCP per 1,000

people in the United States (tripling current PCP density) would result in a 102% increase in odds of referral-sensitive admissions among blacks, 64% among Hispanics, and 36% among whites, relative to marker admissions (urgent, not sensitive to primary care) (12).

The evidence of benefits from improved primary care services is even stronger than is the evidence for the benefits of more primary care clinicians. In the United States, there are more than 1,000 federally funded health care centers that must meet criteria for good primary care to receive government funds. A lower percentage of infants are born with low birth weight in these centers than in similar populations elsewhere, regardless of whether the areas are urban or rural. For populations at great risk of social deprivation, e.g., African American populations, the same is true, even though low birth weight is more common in these areas. People receiving care in health centers on the basis of the principles of primary care have a greater reduction in both relative as well as absolute inequity in low birth weight between more advantaged and less advantaged population groups (68).

Many studies in Brazil, using a variety of methods in diverse areas, are consistent in showing that more and better primary care was associated with fewer hospitalizations caused by conditions that should be avoidable with good primary care (ACSC) from 1997 to 2007; the lowest ACSC rates were in areas with greater than 75% reformed primary care coverage and few private hospitals (53). Hospitalizations for ACSC associated with chronic diseases in the reformed areas declined at a rate double that of hospitalizations from other causes, and the decline was greater in areas with greater coverage by reformed primary care facilities (the reformed areas are mainly those with low social conditions: more poverty, violence, prostitution, drugs, and illiteracy) (53, 54). States with the greatest primary care coverage experienced a 5% greater reduction in ACSC than did states with the lowest coverage and more than twice as much as the reductions in other hospitalizations (21). In a large city in Brazil, reductions

in such hospitalizations declined more in areas of high social vulnerability, especially among women (59).

Inequity in receipt of specialty services is much greater than in receipt of primary care services, even in countries with relative equity in use of primary care services (15, 22, 28, 29, 32, 99, 102). Therefore, interventions that give preference to specialist services are likely to increase inequity. In Spain, use of specialists is greater for younger, healthier, and more educated people (74). In Scotland, lower-class individuals are equally likely to receive cardiac surgery if they are judged as equally urgent, but they are less likely to be judged as urgent (67). In Ontario, Canada, where there are disincentives for specialists to see patients without a referral from primary care, family income is unrelated to the seeking of care or frequency of visits to either primary care or specialists after controlling for morbidity burden (7, 35). In the United States, black patients waiting for renal transplants are much less likely to receive them; patient characteristics, such as histocompatibility, account for only 14% of the inequity (38). The authors did not examine the extent to which differences in primary care affiliation were associated with these inequities. In clinical care, in which discretion plays a role in decisions about interventions in individual patients, patterns of inequity may vary. For example, in ischemic heart disease, there are differences in the interventions used in different population groups. Asians in the United Kingdom were found to have more angiography than other population groups (45). In western Australia, there were no socioeconomic differences in receipt of coronary procedures in patients with acute myocardial infarction. In contrast, among patients with angina, more advantaged women were more likely to receive angiography (50).

In a series of studies using video vignettes of patients with symptoms of coronary heart disease (in the United States and the United Kingdom), diabetes (three U.S. states, the United Kingdom, Germany), and symptoms of depression and coronary heart disease (two U.S. states), there were large differences in

diagnosis: More deprived populations received more different diagnoses despite the same vignette, and large differences were seen across the countries (highest rates of different diagnoses in the United Kingdom, somewhat lower rates in Germany, and the lowest rates in the United States) (52). In the United Kingdom, the prevalence of a major chronic disease (kidney disease) is much lower in practices serving socially deprived people, although the opposite is true in population data (108). Thus, indices of suspicion for diseases systematically differ in people with the same presenting problems, depending on patient and cultural characteristics. This aspect of clinical services (recognition of patients' problems) has received very little attention in the clinical literature in general (106) and the equity literature specifically.

Primary care enhances equity in health because its functions—first contact access, person-focused care over time, comprehensiveness, and coordination of care—are especially beneficial to disadvantaged populations (92). Each of these functions makes its own contribution to greater effectiveness and equity; together they provide a basis for a health system geared to better overall health and better distribution of health across population subgroups (92). Greater accessibility and first contact use and better information systems for coordination of care are particularly advantageous for people with limited ability to devote time and resources to accessing and integrating the various facets of care over multiple clinicians and places. Person- (rather than disease-) focused care over time (not just in visits) is associated with better knowledge of patients' needs, better recognition of their problems, and greater efficiency in the presence of multiple risks. Greater comprehensiveness and coordination of services make care more effective and efficient for populations with greater degrees of morbidity.

The equity-enhancing role of primary care is robust across different types of health challenges and in different types of places. It aims to reduce the incidence of many health problems by improving person-focused prevention. It plays an important role in reducing severity

of most health problems. Primary care, by facilitating appropriate use of specialist care, is equity-producing for most if not all health conditions responsive to personal health services. Combined with the efforts of public health and progressive social policy, primary care is critical to improving equity in health.

## QUALITY OF CLINICAL CARE

Clinical care involves recognition of the patient's problem, diagnosis, management, and follow-up. All four are particularly challenging when treating socially disadvantaged minorities (26), who are more likely to be judged as unattractive by physicians and practice staff (65). Because of access problems, these patients often appear when their problems are more severe. In the context of greater multimorbidity, identification of priorities for attention in short visits is likely to be more difficult. Cultural, educational, and language differences make it more difficult for clinicians to grasp quickly what the patient's problem is. Problem recognition is a rate-limiting step in the process of providing care; when it is incomplete, subsequent diagnosis, management, and follow-up will be inadequate (26). Multiple communication modalities and expanded information technology, culturally sensitive outreach and follow-up, and coaching of workers in proactive patient roles would extend these processes of care beyond the customary clinic visit (26).

The largest analyses of inequities in clinical care have been carried out by the U.S. Agency for Healthcare Research and Quality. The predominant focus on race and ethnicity and confounding with socioeconomic status and access to care (income, health insurance status, cost-sharing requirements, education, etc.) limits our ability to generalize, but a few generalizations can be made from existing reports (1, 3):

- Few if any types of inequities are consistent when analyses are conducted separately for different disadvantaged groups, thus indicating the likely existence of

many influences on receipt of different aspects of services.

- Very few measures of quality of care are available by socioeconomic status. Almost all show disadvantage at all income levels below the highest. These include such measures as receipt of prenatal care in the first trimester, childhood immunization rates, advice about good diets for children, children ages 3–6 receiving vision checks, persons aged 65+ receiving pneumococcal vaccine, and recommendations for mammography screening at ages 40+, all of which are arguably access measures rather than quality measures. The gradient in quality goes from poorest in the lowest-income quintiles to Hispanic Americans, to Asian Americans, to African Americans, to highest-income quintiles.
- Improvements over time in the equity of processes of care are greater than improvements in outcomes of care. Only in the case of measures of inappropriate care are socioeconomic gradients minimal.

We have very little understanding of the reasons for these inequities in clinical care because the findings are not analyzed by accounting for the characteristics of care that patients receive. For example, a nationally representative sample of adults aged 57–85 showed marked differences in use of medications by people at high risk for cardiovascular disease, particularly if their usual source of care was a hospital clinic (71). This finding is disturbing because most education of medical trainees takes place in hospital clinics.

It is important to learn which aspects of clinical care are most responsible for inequity in clinical care and how to avoid training new physicians in settings that work against achieving equity. One such analysis is instructive: A study in a U.S. state found that public health centers, which disproportionately serve the socially disadvantaged, outperformed both hospital clinics and private doctors as measured by a wide variety of both patient-focused and disease-focused criteria for quality of care (70, 91).

## INAPPROPRIATE OR UNNECESSARY CARE

Private facilities, especially if they are specialist- or hospital-oriented, often are found to provide the greatest degree of inappropriate interventions, such as biopsies, X-rays, gastroscopies, and combinations of these interventions (69), although little is known about their relationship to equity.

U.S. women covered by Medicaid financing (for the poor) are less likely to be injured while giving birth than are privately insured mothers; mothers living in the highest-income communities suffer more obstetric injuries during vaginal deliveries than do those from the poorest communities, as do white mothers as compared with African American and Hispanic communities. However, childbirth injury rates are higher for infants with Medicaid coverage, and white infants have higher injury rates than do infants in other racial groups (78).

In general, in the United States, although black women are not more likely to have medical conditions that are common causes of maternal death, they are 2–3 times more likely to die of these conditions than are white women with the same conditions (13). Contrary to common assumptions, the racial and ethnic disparities in outcomes are not always due to women of color having a higher prevalence of disease, but they are often less likely to receive beneficial treatments that could have prevented their death.

In contrast to virtually all other indicators, there are no statistically significant or consistent differences by race, ethnicity, income, or education in the percentage of individuals receiving inappropriate prescription medication or experiencing adverse effects from medical interventions (3, 4). But because of the lesser exposure of more socially deprived populations to medical interventions that are unnecessary or inappropriate, people in the United States who are of minority status sometimes have fewer adverse events (2). These varying patterns of inequity in health services can provide important clues about the effectiveness and safety of interventions that are widely used in the whole

population but with high rates of inappropriateness and adverse effects, e.g., screening for prostate cancer (109), use of computer tomography (17), routine laboratory studies, antibiotics for sinusitis, DEXA (dual-energy X-ray absorptiometry) scans for younger patients, and Pap tests for patients under 21 years of age (95).

## PREVENTION

Preventive services are of special concern for equity because they are applied to people who are essentially well. Because vulnerable populations are already burdened with greater morbidity, there is urgency to the dictum to “do no harm.” Preventive practices do not operate with equal effectiveness in different populations (8, 113, 115). We lack knowledge about which preventive practices should receive priority in different population groups and whether it is best to apply them in clinical practice or elsewhere (33). Although it is very likely that adequate primary care will reduce inequities in at least some clearly indicated preventive interventions (such as reductions in tobacco use, increased aspirin use after myocardial infarction, hypertension screening, and Pap smears in populations with high rates of cervical cancer), this conclusion cannot be assumed for other interventions that are recommended in clinical care for whole populations.

Primary care is commonly equated with clinical prevention, despite the engagement of many specialists, e.g., ophthalmologists and gynecologists, in preventive activities. Because primary care is ongoing care over time, there are many opportunities for opportunistic prevention, and evidence indicates an association between stronger primary care and better preventive behaviors (especially lower smoking rates). With recognition of the centrality of primary care over the life course, a more accurate characterization would be to consider prevention a natural by-product of long-term interpersonal relationships that build rapport between clinicians and patients rather than a specific characterization of primary care. It falls to primary care to provide advice and guidance

on primary prevention (prevention of the occurrence of illness), secondary prevention (detection in the presymptomatic stage), and protection of patients against the overuse and misuse of screening and diagnostic tests (33). However, the ability of practices to achieve this by-product depends on the adequacy of relationships between practitioners and their patients; less-educated people may have difficulties in building long-term relationships with health care providers. In France, physician-patient agreement on the content of their interactions regarding risk-factor management differs by patients' education level (79).

A strong association exists between both smoking and obesity and neighborhood environmental factors (20, 39, 43). Consideration of the setting most likely to reduce inequities is important because making clinical care responsible for reducing inequity stemming from social and economic environments is ineffective as well as inappropriate. Most studies show that preventive efforts directed at whole populations rather than at individuals in clinical care achieve greater equity in provision of indicated screening programs (25). For example, there are fewer socioeconomic differences (based on education levels) in breast- and cervical-cancer screening in 22 European countries that have population-based screening programs, as compared with countries that rely on clinical care for screening (66).

Even if some preventive interventions are more cost-effective, their higher cost may not be justified on equity grounds. For example, in a U.S. comparison, colonoscopy was found to be more accurate in screening for colon cancer, but more persons will be covered (and therefore experience greater equity) with fecal occult blood testing, and with more life-years gained (93). In the United States, an analysis of the estimated cost of 20 clinical preventive services indicated that 90% use (and, therefore, greater equity) could be achieved with little increase in current costs and with a reduction of more than two million deaths per year. These preventive services included various immunizations (tetanus/diphtheria

boosters, influenza and pneumococcal immunizations); smoking and alcohol cessation counseling; and screening for breast, cervical, and colorectal cancer, chlamydia, cholesterol, hearing, vision, hypertension, and obesity. However, equity concerns were not considered in these analyses (58). Because the effectiveness and relative harm/benefit ratio of each of these interventions vary in different populations, it is provident to prioritize them according to their likelihood of reducing inequities.

### **EQUITY-PRODUCING POLICIES FOR CLINICAL CARE**

Most national and international documents devoted to equity-enhancing strategies focus on system-wide actions that only indirectly address characteristics of clinical care. For example, the report of the Knowledge Network on Health Systems (34) stresses the importance of universal financial access to health services and policies to redistribute resources from areas of less need to those of greater need (34, pp. 6–11). In addition, it recognizes commercialization of health services, neoliberalization of health reforms, global power inequalities, and weak organizational structures as serious impediments to increasing equity (34, pp. 12–14). Although the magnitude of income-related health inequities is generally lower under social welfare–type governments, there is considerable variation even within such countries (23), thus indicating the importance of specific policies informed by evidence. Policies that promote effectiveness and equity of primary health care services have four main characteristics: distribution of resources according to extent and type of health needs, progressivity of financing, degree of cost-sharing, and breadth of services provided in primary care. With few exceptions, countries with equity-focused health policies are countries with strong clinical primary care; conversely, countries with weak policy characteristics have weak primary care health systems (85, 100).

Inequities persist even among countries that have attempted to respond better to people's

needs, but the extent to which they have been successful varies. For example, the differences across income quintiles in the number of women using malaria prophylaxis is much less in Malawi (and to a smaller degree, in Tanzania) than in Guinea or Niger; cross-income quartile immunizations are better distributed in Bangladesh and Colombia than in Indonesia or Mozambique, and the percentage of births attended by a health professional is much more equitable across income groups and/or education of mother in Benin and Botswana than in Cambodia or Peru (111, p. 10). It is not clear that these differences in intercountry inequities are generalizable across health measures or which specific policies are responsible for them.

Publicly supported facilities and public insurance have been found superior to private ones in reducing or eliminating inequities (evidence summarized in 92). In the United States, individuals with public insurance have lower rates of uncontrolled hypertension but not of high cholesterol levels (80), indicating that the specific policies that control different aspects of health operate differently, depending on what the public financing enables. Whereas universal financial access is important in moving toward equity in health, it is equally clear that it does not always lead to either more equitable access to or quality of services.

Several countries have embarked on primary care reform with demonstrated improvements in equity. Spain changed its health services system in the mid-1980s to make it more primary care oriented. This reform was implemented in stages; the most deprived areas underwent reform first. Hypertension-related conditions are known to be responsive to primary care-level interventions; within a 10-year period after the reform was started, those areas in which changes were first implemented had the largest decline in mortality rates associated with hypertension, followed by those areas with somewhat later implementation (105). In contrast, deaths associated with perinatal causes, which are responsive to specialty care (rather than primary care) intervention, declined, but in no



particular pattern relative to the primary care reform.

Within less than ten years after Brazil's primary care reform, infant and (especially) post-neonatal mortality had dropped markedly, with decreasing inequity across different regions. Decreases in death were mainly a result of decreases in diarrhea and respiratory conditions, which are particularly sensitive to primary care services. There were both relative and absolute decreases in inequity for childhood stunting (11, 55) and socioeconomic differences disappeared in outpatient and inpatient services for adults who reported poor health status (94).

During the 1990s, Thailand progressively expanded a medical insurance program to cover the entire population. This universal coverage scheme requires people to be registered at a primary health care facility. Rural populations are of lower socioeconomic status in Thailand; at least one primary health center was developed in each rural village with the active advocacy of the Rural Doctors' Society. Within four years, urban-rural and socioeconomic gradients in patterns of utilization were greatly reduced (114). Under-5 mortality was lowered by a much greater percentage (44%) in the poorest income quintiles than in the highest income quintile (13%), with a progressively greater reduction in successive percentiles of wealth. Both relative and absolute differences in under-5 mortality were reduced.

Studies that focus primarily on primary care for infants and children in a variety of developing and middle-income countries show much greater equity in health outcomes than demonstrated in comparable areas without primary care reform (56, 101).

## **THREATS TO EQUITY IN NEW APPROACHES TO HEALTH SERVICES**

Although many countries are recognizing the need to improve equity in health, some new approaches to clinical care are likely to impede progress.

## **Policy: Disease-Focused Rather than Person-Focused Care**

Western health systems are increasingly dominated by a focus on professionally defined diagnoses as the main challenge of health services (75). Many health problems cannot be categorized as specific professionally recognized diagnoses. Moreover, in the past half century, the successes of medical interventions have resulted in increased survival with consequent increases in the presence of multiple conditions in the same person, particularly in socially disadvantaged populations (which always have a greater burden of illness). A disease-oriented paradigm of care increases inequity in health because these disadvantaged populations have greater requirements for managing the complexity of their interacting diseases and treatments, than for management of the individual diseases themselves (90).

## **Policy: Guidelines**

Clinical guidelines have become an important part of the practice of medical care. Directed at management of individual diseases and generally limited to only a small subset of diseases occurring primarily later in life (with some exceptions, e.g., diabetes), guidelines raise concerns from the viewpoint of equity.

Most evidence of the benefit of guidelines excludes people with multimorbidity and, thus, underrepresents populations with the greatest burden of morbidity (such as the socially disadvantaged) (16). The absence of requirements that application of guidelines monitor the occurrence of adverse effects when applied in practice will lead to an underestimation of resulting inequities because the greater multimorbidity of socially disadvantaged groups makes them more vulnerable to adverse effects, compounded by more limited access to clinical services to address these effects.

Much of the evidence on which guidelines are based is not applicable to all populations. For example, the utility of HbA1c for both diagnosis and management of diabetes varies by racial groups, some of which may be at higher

risk than others of adverse effects from adherence to current guidelines (77). Controlling for income and education differences, disparities in adherence to common guidelines [for LDL (low-density lipoprotein) cholesterol, blood pressure, and hemoglobin A1c levels] is not well related to reduced inequity in health measures in patients with diabetes, cardiovascular disease, or hypertension, even within particular health care facilities. Thus, improvements in equity in measures of adherence to care guidelines are not good proxy measures for improvement in health equity across different population groups because of population group differences in the nature of the disease, unknown differences in care characteristics (such as relationships with PCPs or specialists), multimorbidity, or other characteristics (96).

When adherence to guidelines is financially rewarded, such as in the U.K. Quality and Outcomes Framework, there is less care for nonincentivized conditions; because socially deprived populations have more of these conditions, overall quality of care will be preferentially compromised where such programs form an important part of practice time or income. For example, the reduction in continuity of care since the introduction of the payment for performance system and its guidelines in the United Kingdom (42) is likely to be associated with increased inequity in health services because socially deprived populations have the most to gain from practices that provide ongoing person-focused (rather than disease-oriented) care over time.

Moreover, there is concern that the choice of conditions for payment for performance may not follow patients' preferences or even their needs, and these may differ across different population groups (30). An inquiry into inequalities in general practice in England found numerous examples of inequities in general practice, including: fewer general practice and mental health services, poor hypertension control, lower rates of colorectal screening, and lower indicated immunization rates in individuals over age 75 in socially deprived areas since payment for performance was instituted (42).

The current focus on disease-oriented guidelines draws attention away from the health problems of children and youth and from populations whose burden of morbidity is heavily influenced by social, occupational, environmental, and geographic exposures. Many parts of Latin America and Africa have little to gain from disease-oriented guidelines that emphasize routine follow-ups with laboratory tests, and a world focused heavily on selected chronic diseases does a disservice to these disadvantaged populations because, in addition to having higher rates of these diseases, they are simultaneously afflicted with acute illnesses and with acute exacerbations of chronic illnesses.

It should be of concern that the European Parliament resolution on "reducing health inequalities" mentions 26 manifestations of inequality but does not prioritize its 78 suggested recommendations according to the extent to which they will reduce inequity (24). Many recommendations, in fact, are likely to increase inequity, based on existing knowledge that they will preferentially benefit more advantaged populations because they are based on changing behaviors individual by individual and/or because they require expensive new technology to be useful.

In view of these potentially serious anti-equity considerations, Hutt & Gilmour (42) argued for a reorientation of the basis of disease-by-disease payment for performance to one in which achievement is based on a broader range of health problems, which would better serve the needs of socially disadvantaged populations—populations who have more multimorbidity and greater need for patient-focused, community-oriented care over time.

### **Policy: Inadequate Use of Data to Inform Clinical Care**

A review of the impact of policy on reducing inequities (57) revealed that most of the literature on equity focuses on access, utilization, and financing, sometimes confusing them with equity in health. Only 7 of 69 references dealt

**Table 1 Indicators for equity/inequity assessment<sup>a</sup>**

		Source, where applicable
Indicators for all health conditions	Reduction in disparities across social groups Medical problem, no doctor visit Did not get recommended test, R <sub>x</sub> , or follow-up Did not fill prescription Problem paying medical bill Unavailable care Waited five or more days for appointment Very difficult to see specialists Dental problem, no dental visit	81
Perinatal indicators	Rates of Undesired pregnancies Perinatal complications Pregnancy-related complications Postneonatal mortality Neonatal death from tetanus Maternal mortality	
Infancy indicators	Low birth weight (specialty care) Postneonatal mortality (primary care) Breastfeeding <sup>b</sup> Tetanus toxoid <sup>b</sup> HIV/AIDS	44
Childhood indicators	Immunizations (primary care) Child survival to age five Rate of death from external causes (public health) Rate of death from “medical” causes (primary and specialty care) All primary care Malaria protection and treatment <sup>b</sup> Management of gastroenteritis <sup>b</sup> HIV/AIDS <sup>b</sup> Treatment of respiratory infection <sup>b</sup>	44
Teenage period indicators	Preventive and health-promoting behaviors, especially those not related to specific diseases Adverse effects of medications Rates of completed and attempted suicide Emergency visits for asthma Hospitalizations for ambulatory care sensitive conditions	
Early- and middle-adulthood indicators	Breastfeeding, seat belts, physical activity Low birth weight of offspring Low smoking rates Low asthma death rates Low rates of hypertension and cerebrovascular disease: premature mortality and age-adjusted death rates Hospitalizations for ambulatory care sensitive conditions Suicide rates Symptoms of peptic ulcers Adverse effects of medications	

(Continued)

**Table 1 (Continued)**

		Source, where applicable
Later adulthood indicators	Asthma death rates Deaths from cerebrovascular disease Suicide rates Adverse effects of medications (postmarketing surveillance) Hospitalization for ambulatory care sensitive conditions Symptoms of peptic ulcer Heart morbidity and mortality Cancer morbidity and mortality	
Outcomes for equity research	Absolute or relative differences in Case fatality rates Immunization rates Incidence of specific diseases Infant mortality: neonatal and postneonatal DALYs, HALYs, HALE Age-adjusted mortality: total and cause-specific Life expectancy: potential years of life lost	

<sup>a</sup>Abbreviations: DALYs, disability-adjusted life years; HALE, health-adjusted life expectancy; HALYs, health-adjusted life years.

<sup>b</sup>Especially developing countries.

with health or attempted to relate these to differences in clinical care. Ten years later, this lack is still characteristic of the literature.

A major shortcoming of most existing data sets is their inconsistency in identifying important population subgroups. For example, the major U.S. report on “disparities” sometimes displays population groups by race and gender, but only occasionally socioeconomic status. Similarly, world health data are displayed differently for different indicators. Although the World Health Organization has achieved standardization of data for many indicators of health at the country level, there are, as yet, no standardized data for examining differences across population groups within countries. Studies comparing overall health levels with inequity levels can provide powerful information for policy-making. With regard to infant mortality, some countries do relatively well overall but have poor equity (Peru), some do poorly overall but have relatively low inequity (Haiti), some are better on both (Uzbekistan), and some do poorly on both (Mozambique) (97). Data such as these, if collected over time in a standard way in all countries, with a wide variety of health

indicators, would provide much more data to inform interventions to reduce inequalities than is the case at present.

A variety of standard indicators of different types, some generic, some disease-oriented (if they can be shown to be generalizable or to lead to insight regarding the mechanisms of care provision) can be used to monitor continuously the extent of inequity across different major population groups (Table 1). Characterization of the population groups may have to differ from place to place but should remain consistent over the variety of indicators. Some characteristics are: occupation (for specific exposures), income (for illness measures), education (for preventive measures), geographic area indicators, or, preferably, several of these characteristics. They should be consistent within policy-making jurisdictions.

Gaps in knowledge about distribution of health levels within countries interfere with understanding their mechanisms of origin and maintenance. For example, there are sometimes exceptions to the generalization that stronger primary care is associated with better overall health. Denmark has all the characteristics of a

country with an excellent primary care infrastructure, but many of its health indicators are as poor as those in the United States; the converse is true for France, which has a relatively inadequate primary care infrastructure yet has some health indicators (particularly later in life) that are better than those in countries with high-performing primary care infrastructures. Possible differences in equity might be informative to explain these anomalies and to develop strategies to deal with them.

## CONCLUSIONS

Long-term improvements in health equity will require social changes in many realms of health policy. In the short run, health services can do much both to alleviate inequities and to avoid making them worse. Both are challenges for clinical care, working in conjunction with

public health and health policy makers. This review has identified general problems in health systems and particular problems in clinical care that are not limited only to socially deprived groups. The relative contribution of individual-versus population-level strategies to reduce health inequities and of clinical care versus interventions that are more effectively addressed in the wider social realm requires serious consideration. Addressing the problems of inequity in clinical care will require more careful thinking about the relative effectiveness of various types of interventions, in particular those related to clinical preventive services: achieving care over time rather than only in encounters, focusing on patients and paying greater attention to their health priorities (rather than to professionally defined diagnoses), and determining how to address these priorities within the context of patients' lives.

## SUMMARY POINTS

1. Individuals in different social strata worldwide differ in their burden of morbidity and the clinical care they receive. We consider these inequities in clinical care and the policies that influence them.
2. The magnitude of inequity in clinical care differs systematically across health systems.
3. Governments that assume greater responsibility for ensuring primary care-oriented services appear to achieve greater equity in clinical care.
4. A major component of inequitable clinical care is the result of differences in adequacy in recognizing the health needs and problems of patients and populations, yet this is not a focus of any quality-of-care effort.
5. Person-focused care is better suited to addressing equity problems than is disease-focused care.
6. Some recent health services approaches (specifically, a focus on particular types of diseases and guidelines) appear to work against achieving greater clinical care equity. Investigators have failed to learn about equity from existing clinical data.
7. More consistent focus on the occurrence of adverse events is likely to provide evidence on the relative impact on health of overuse of clinical interventions in different population groups.

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## Errata

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