Equity in Health and Health Services

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Primary Care Course
(Based on Cape Town, South Africa, 2007; and Barcelona, Spain, 2009)
This presentation first provides a definition of equity that is amenable to measurement of ill health. It then discusses major findings concerning influences on equity in health, findings from research on achievement of equity in health in various countries, and indicators of equity for future studies of equity in health.
Equity in health is the absence of systematic and potentially remediable differences in one or more aspects of health across population groups defined geographically, demographically, or socially.

This definition was developed by the International Society for Equity in Health at its first meeting in Havana Cuba in June of the year 2000 - thus greeting the new millennium with a definition of equity in health which, for the first time, made it possible to assess the state of equity in any area in a standard way. Previous definitions took recourse in terms such as “fairness”, which do not lend themselves to standardized measurement and, by being explicit about systematic differences across population subgroups, made it clear that equity was distinguished from equality by differences across population subgroups rather than between individuals in a population.
What Are “Systematic” Differences?

“Systematic” means consistent differences and is at the heart of the distinction between inequalities across individuals and inequities. What makes differences “systematic” is a pattern of influences that operate similarly to create differences in health.
Equity Research Is Not the Same as Social Determinants Research

- Social determinants research assumes an individual model of health.
- Equity research assumes a population model of health.
- Social determinants research generally neglects types of influences on health that are other than social.
- Equity research includes consideration of political, policy, environmental, and health systems effects, and their inter-relationships.
In the vast literature on social determinants, the focus is on describing the influence of factors at the individual or individual family level on the health of individuals or individuals in families. Thus, we know very clearly that income, education, and occupation influence individual health. Equity research, however, is concerned with differences at the subpopulation level. Influences at the individual level are often expressed as increases in relative risk of compromised health. Influences at the population level are influenced not only by the extent of increased risk at the individual level but also by the relative frequency of influences in the subpopulation, i.e., by attributable risk. An influence that is very highly disadvantageous, i.e., has a high relative risk, may not be an influence on equity in health if it does not exist in the subpopulation of interest.

This field of endeavor is usually known as “social medicine”, which, in contrast to biomedical orientation taught in most medical schools, takes into consideration influences such as the overall physiologic vulnerability of the individual as a result of various exposures, material resources such as income or education, social resources such as social support networks and friendships, risky behaviors, chronic stress, and exposure to health services.

Extending this even further distally from health, these individual characteristics are influenced by community characteristics, such as exposures at the community level, distributions of wealth in the community, influences of powerful groups within the community, behavioral and cultural characteristics maintained by the community, and the type and extent of health services in the community. This level of influence on health is commonly known as ‘community medicine or community-oriented medicine, a term made popular by the Karks in South Africa in the middle of the 20th century.
Characteristics of Social Influences on Health

• They are interactive. Mechanisms of effect cannot be specified, except theoretically, and may differ from one population to another.
• Their relative frequency varies from one population to another so that relative risk, but not attributable risk, is the focus of attention.
An accumulating literature on health over the life course is providing information on developmental disadvantage. Early influences, i.e., in infancy and childhood, stem primarily from nutritional deprivation and from infections, each of which increase the risk of different types of illnesses later in life. Later influences are primarily those resulting from a myriad of interacting sociodemographic and socioeconomic characteristics, and from the hopefully-counteracting external preventive actions in the health sector.

Sources:

Generalizations from Equity Research

Variability in health across geographic areas is greatest among the lower social classes.

The level of geographic aggregation influences the nature and extent of inequities.

The weakest association between income and health is in old age. Social advantage is damaging at any stage in life, but is especially harmful when experienced early in life.

The effects of social class appear to be cumulative over the life course.

Sources:


Generalizations from Equity Research

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 than for occurrence of illness.

Sources:

Starfield 04/07
EQ 6169
Generalizations from Equity Research

Socioeconomic differences in disability-free life expectancy are more pronounced than differences in life expectancy.

Mortality rates are higher in lower SES for almost all causes.

The contributions of specific causes to differences in total mortality varies between countries.

The increased likelihood of reporting fair or fair health in people with low family income is greater in US states that have high income inequality at every level of income except the highest, and is greatest at lowest incomes.

In this US study, the percentage of people who report being in fair or poor health increases rapidly at increasingly low family income, especially in states with high income inequality. That is, it is not only low income that is associated with poor health but also the social milieu in which socially disadvantaged people live.

This diagram shows that, in contrast to virtually all other indicators, people with low income do NOT have higher rates of adverse events. In fact, their rates of adverse events are lower than those of the majority group, a possible effect of their having less access to specialist services.
This diagram shows that, in contrast to virtually all other indicators, people with minority status do NOT have higher rates of adverse events. In fact, their rates of adverse events are lower than those of the majority group, a possible effect of their having less access to specialist services.

Although studies, mostly inpatient, have shown that linguistic minorities have higher rates of adverse events (Tang G, Lanza O, Rodriguez FM, Chang A. The Kaiser Permanente Clinician Cultural and Linguistic Assessment Initiative: research and development in patient-provider language concordance. Am J Public Health 2011;101:205-8. ), population-based studies suggest that, overall, socially disadvantaged minorities may NOT have higher rates of adverse effects, mainly because they do not have access to inappropriate specialist services.
Health services exert their effect primarily on equity in progression of illness and case-fatality rates.

Occurrence of illness is primarily affected by other types of influences.

Mortality rates and life expectancy are influenced by both, so that it is more difficult to sort out mechanisms of effect.
Generalizations from Equity Research

Disadvantaged populations do not do better living in advantaged areas (US data).

Wealthier people living in disadvantaged areas have compromised ACCESS to health services and consequent poorer health potential (US data).

Sources:
The differences between the life expectancy of men and women are greater the poorer the income group. That is, there is an interaction between gender and socioeconomic status, with men being more disadvantaged by lower income than women, at least in Canada.
<table>
<thead>
<tr>
<th>INCOME INEQUALITY</th>
<th>Little effect</th>
<th>Large effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>High “stress”</td>
<td>Smoking</td>
<td>Suicide</td>
</tr>
<tr>
<td></td>
<td>Ischemic heart disease</td>
<td>Homicide</td>
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<td></td>
<td>Lung cancer</td>
<td>(US)</td>
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<td></td>
<td>(Finland, Denmark)</td>
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<tr>
<td>Low material/social supports, including primary care</td>
<td>Other cancers</td>
<td>Infant mortality</td>
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<tr>
<td></td>
<td>Stroke</td>
<td>Low birth weight</td>
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<tr>
<td></td>
<td>Postneonatal mortality</td>
<td>Child survival</td>
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<td></td>
<td>(US)</td>
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</table>
Improving average health, i.e., population-wide rates of morbidity and mortality, is often associated with increasing inequities, because new and effective interventions often reach the more advantaged first, thus increasing the variability within the population. Also, influences with high relative risk of poor health are not necessarily appropriate targets for equity-focused interventions, as their frequency in the subpopulations may be low and hence not contribute much to reductions in inequity overall.


Average levels of health (e.g., overall age-adjusted mortality rates) differ from level of inequities in health in different countries. Peru and Uzbekistan do better on average health than Mozambique and Haiti, but Uzbekistan has much less inequity than Peru. Mozambique and Haiti are characterized by poor overall health, but Haiti has less inequity between the poor and the rich. The extent of inequity in health in a country cannot be determined from overall mortality rates, even if they are adjusted for various influential characteristics. Some countries have better average mortality rates than otherwise comparable countries, but the degree of inequity in the distribution of health is greater. The opposite is also the case: some countries with very poor mortality rates achieve higher levels of equity (fewer differences) across population subgroups. Lessons can be learned from policies in both of these types of countries.
The “determinants” of health inequity are not only “social”; they are “societal,” involving all aspects of society.
In order to develop strategies to improve equity in health, it is necessary to have a clear picture of the various influences on health and their interactions. Conventional models of “determinants of health” (even those characterized as “population health” models) are more oriented to determinants of health in individuals than populations. In reality, there need to be two models of health: one directed at understanding influences on individual health and one directed at understanding influences on population health.
Increasing recognition that there are systematic differences in health across different population subgroups, i.e., inequity in health, has led to an expanded view of influences on health. In this view, health is viewed as both an average of individuals in the population and the way in which health is distributed in the population. In populations, community and policy contexts have a major role in influencing more proximal influences on health in communities and on individuals in communities.

These societal influences operate differently in the various subgroups of the population. It is these factors, rather than those at the community and individual level, that primarily influence distribution of health within the population rather than average of levels of health such as those that are commonly in use in health statistics.

Political contexts determine the nature of policies, which, in turn, influence the characteristics of communities: environmental; levels of income and their distribution, e.g., income inequality; power and status relationships; behavioral and cultural characteristics; and health system characteristics. Because they are all influenced by the political context, they potentiate or interact with each other and more directly (through unknown individual characteristics and exposures) influence both health levels as well as distributions of health in individuals, both of which also are affected by demographic characteristics and historical health disadvantage i.e., the tendency of good or poor health to persist for long periods of time in defined geographic areas.¹

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There are only a handful but increasing number of studies concerning the influences of such characteristics on various health needs.²

A focus on influences on the health of populations does not assume a particular pattern of risks among individuals in that population. In this diagram, the individual risk factors are less salient than community and policy characteristics in a political context. Conventionally the province of public health, interventions at these levels have emphasized the extent to which societal factors can be modified to prevent the occurrence of ill health. Thus, prevention is a major thrust of public health efforts. Less common is consideration of the extent to which characteristics of these levels contribute to worsening of health where it has already been compromised.

In the most recent 20 years, the salience of such activities has become more visible as, for example, the role of health policy in facilitating or interfering with the practices of pharmaceutical companies in marketing retroviral medications for HIV/AIDS. In this sense, the “determinants of disease” and their progression are societal (rather than social), and they operate primarily to alter rates of discomfort, disability, and death rather than occurrence (incidence) of ill health.

The other important characteristic of a focus on populations is that it explicitly requires consideration of distributions in the population, i.e., equity in health, as well as average levels of ill health.

Globalization, fostered by changing worldwide economic and social relationships, changes the balance of influences on health, the ability of the health sector to recognize and deal with changing and interacting health needs, and the ability of nations to develop social and health policies that influence the way in which health services are organized and delivered. In turn, changing social, economic, and health policies change individual health risks, the health services system, and household and community wealth, thus creating changes in overall health levels as well as inequities in health.

Manifestations of Equity in Health Financing
(WHR 2000, Chapters 2 and 5)

- Low cost sharing at point of service
- Equal minimum benefit packages
- Pooling of resources, e.g., community rating
- Regulation to assure universal inclusion in pools
Manifestations of Equity in Health Financing (continued)  
(WHR 2000, Chapters 2 and 5)

- Large purchasing units
- Combination of payment mechanisms to achieve good health care practices
- Global budgets rather than line-item budgets
The World Health Report 2000 ranked countries on equity of financing. Their measure used a ratio of spending on health divided by household expenditures except for food, which assumes that all households should spend the same proportion of their non-food dollars on health services.

This measure is not consistent with WHO’s own discussion of fairness in financing.
Health System Influences on Health

- Public expenditures on health\textsuperscript{1, 2, 3}
- Method of healthcare financing, supply of physicians
- Orientation of health system\textsuperscript{4, 5}

Sources:

Countries that have better average health status tend to have less inequality in health status.

System factors and health policy are very important.

Primary care-oriented countries rank higher on features critical to equity.
This slide shows the four main policy characteristics related to effectiveness and equity of primary health care services: 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. Scores range from zero (0), where the policy characteristic is absent, to a score of 1, where the characteristic is present but poorly developed, to a score of 2, where the characteristic is well developed. Belgium, France, Germany, and the US have weak primary health care systems; Denmark, Finland, The Netherlands, Spain, and the UK have strong primary healthcare; and Australia, Canada, Japan, and Sweden are in-between. With few exceptions, countries with equity-focused health policy are countries with strong primary care; countries with weak policy characteristics have weak primary care health systems.

Sources:


<table>
<thead>
<tr>
<th>Country</th>
<th>Allocation (Score)</th>
<th>Progressive Financing*</th>
<th>Cost Sharing</th>
<th>Comprehensiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>France</td>
<td>0</td>
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<td>0</td>
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<tr>
<td>Germany</td>
<td>0</td>
<td>1**</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>US</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Australia</td>
<td>1</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>Canada</td>
<td>1</td>
<td>2</td>
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<td>2</td>
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<tr>
<td>Japan</td>
<td>1</td>
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<td>Sweden</td>
<td>2</td>
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<td>Denmark</td>
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<td>Finland</td>
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<td>Netherlands</td>
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<tr>
<td>Spain</td>
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<tr>
<td>UK</td>
<td>2</td>
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</tbody>
</table>

*0=all regressive 1=mixed 2=all progressive **except Medicaid
In New Zealand, for-profit primary care facilities charge much more to minority populations when compared with people from majority populations, especially for indigenous people.
In New Zealand, for-profit primary care facilities are much less likely to have equity-enhancing policies than is the case for non-profit facilities.

For-profit and Non-profit Primary Care in New Zealand: Sociodemographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>For-profit</th>
<th>Non-profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maori or Pacific</td>
<td>15%</td>
<td>60%</td>
</tr>
<tr>
<td>Most deprived quintile</td>
<td>17%</td>
<td>53%</td>
</tr>
</tbody>
</table>


In New Zealand, for-profit primary care facilities are much less likely to serve socially-disadvantaged patients.

This chart shows the relationship between the wealth of 177 countries and their child survival to age 5. The size of the circle represents the population of the country. Child survival to age 5 improves with increasing gross domestic product (GDP) per capita. However, at any given level of GDP per capita, there are large variations in child survival. This indicates that countries differ in important ways in their approaches to maximizing the health of their people. Other evidence shows that one of these ways concerns their policy towards organizing and developing equitable health systems.

In this chart, countries on the left are paired with countries on the right that spend a much lower proportion of government expenditures on health for the poor than for the rich. Each pair has approximately the same gross domestic product (GDP) per capita. The number of children per 1000 who survive to age 5 is much greater in the countries on the left; countries that provide a greater percentage of resources to the poor compared with the rich have between 25 and 150 more children who survive than their paired country.

Sources: analyses from data in:


In 7 African countries

- The highest 1/5 of the population receives well over twice as much financial benefit from overall government health spending (30% vs 12%).
- For primary care, the poor/rich benefit ratio is much lower (23% vs 15%).

“From an equity perspective, the move toward primary care represents a clear step in the right direction.”

Sources:

In European countries, there are vast differences in equity in receipt of specialty services. In the UK and Netherlands, there are no significant differences across socioeconomic strata after adjusting for age and health status. In Norway, there are wide confidence intervals, suggesting possible variability within the country, leading to small and insignificant differences overall. In contrast, Denmark, Ireland, Finland, and especially Portugal have large and very significant differences in access to specialist care across population subgroups.

Sources:


Primary Care Physicians and Equity: Evidence-Based Summary

In areas with low social inequity, the additional effect of primary care is small.

In areas of high social inequity, the additional effect of primary care is larger.

Sources:
Primary care has a large effect on self-reported health, especially in areas where there are large differences in income between the non-wealthy and the wealthy (high income inequality). In 60 nationally representative US communities, areas with moderate income inequality have a 16% higher proportion of people reporting fair or poor health if primary care resources are low. The effect of primary care is twice as great in the most socially deprived areas: a 33% increase in fair or poor health if primary care resources are in poor supply.

The positive effect on equity is shown in the case of stroke mortality. States with high income inequality and relatively high primary care physician to population ratios have lower stroke mortality whereas those relatively deprived of primary care physicians have an increased stroke mortality. States with low income inequality also show the same effect of high and low primary care resources: more primary care physicians associated with lower mortality and fewer primary care physicians associated with higher mortality.

The equity-enhancing effect of primary care resources (primary care to population ratios) is shown in a study that examined postneonatal mortality rates in the 50 US states. States with high income inequality have 17% lower postneonatal mortality if they were well endowed with primary care physicians, but a 7% higher postneonatal mortality if they were relatively deprived of primary care physicians. States with relatively even distribution of income have a small positive effect of relatively high primary care physician to population ratio and a slightly higher mortality if primary care resources were relatively low. That is, the importance of primary care is greatest in socially deprived areas.

In this 5 country comparison, samples of the population under average income and over average income were asked about problems associated with not being able to afford or get needed health services.

1. Had a medical problem but no doctor visit
2. Were unable to get a recommended test, treatment, or doctor visit
3. Did not fill a prescription
4. Had a problem paying a medical bill
5. Care was not available.
6. Waited 5 or more days for an appointment
7. Found it very difficult to see a specialist
8. Had a dental problem but no dental visit

Countries were scored and then ranked on the average for the 8 items. The worst score was for people with under-average income in the US. The US also had the worst score for people over average income, and the greatest difference between those with under and those with over average incomes.

The UK overall had the best scores and the least inequity.

During the 1990s, policy in Thailand led to the development of at least one primary care health center in each rural village. During this time period, insurance for medical services was progressively expanded to cover the entire population by the early 2000s. A very active Rural Doctors Society was a major advocate of this expansion. During this period, under-5 mortality was lowered by a much greater percentage in more deprived populations than in less deprived ones: 44% in the poorest quintile and 13% in the richest percentile - with a progressively greater reduction in successive percentiles of wealth. Both relative and absolute differences in under-5 mortality were reduced.

Although it is often assumed that “public clinics” give “poor care to poor patients”, this study in Thailand (as in studies in other countries, including the Community Health Centers in the United States) shows that poor people receiving care in community health centers get the best care as judged by the fewest inappropriate interventions. Private facilities, especially if they are specialist- or hospital-oriented, provide the greatest degree of inappropriate interventions, such as biopsies, x-rays, gastroscopies, and combinations of these interventions.

A comparison of age-adjusted survival from breast cancer showed that

- Low SES is strongly associated with decreased survival in US, but not Canada.
- The survival advantage in Canada is present in low income areas only.
- The survival advantage in Canada is much larger at ages under 65.
- The Canadian survival advantage is larger for later stage diagnosis. That is, there is almost certainly a medical care benefit to equity in the Canadian context.


The survival advantage from breast cancer in Canada is limited to socially disadvantaged populations, and is greater under age 65 than over age 65 – the population groups that have financial access to care in Canada but not the US. Combined with other evidence, it is highly likely that it is better access to good primary care services in Canada that is responsible for greater effectiveness and equity in this as well as other measures of health amenable to medical care in that country. Thus, equity in diagnosis and management of breast cancer is greater in Canada than in the US. This superiority of age-adjusted survival is particularly evident when comparing socially disadvantaged populations and is less in population subgroups with universal, government sponsored insurance in the US, i.e., those of age 65 and over.
Studies in other developing and middle income countries also show benefit from primary care reform.

- In Bolivia, reform in deprived areas lowered under-5 mortality rates compared with comparison areas.
- In Costa Rica, primary care reforms in the 1990s decreased infant mortality and increased life expectancy to rates comparable to those in industrialized countries.
- In Mexico, improvements in primary care practices reduced child mortality in socially deprived areas.

Sources:


Perinatal Indicators

- Low 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*
- Tetanus toxoid*
- HIV/AIDS

*especially developing countries

Childhood Indicators

- Immunizations (primary care)
- Child survival to age 5
  - From external causes (public health)
  - From “medical” causes (primary and specialty care)
- Malaria protection and treatment*
- Management of gastroenteritis*
- HIV/AIDS*
- Treatment of respiratory infection*

*especially developing countries

Teenage Period Indicators (all primary care)

- Preventive and health-promoting behaviors, especially those not related to specific diseases
- Adverse effects of medications
- Rates of attempted suicide
- Emergency visits for asthma
- Hospitalizations for ambulatory care sensitive conditions
Early and Middle Adulthood Indicators
(all primary care)

- Low birth weight of offspring
- Breastfeeding, seat belts, physical activity
- Low smoking rates
- Asthma death rates
- 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
Elucidation of pathways is necessary to devise appropriate interventions.¹

Knowing about the pathways to poor health and inequity in health is important. Yet, most “models” of influences on health do not consider pathways and interactions within the pathways that may operate differently in different populations. Even newer conceptualizations² that focus specifically on societal influences do not explicitly recognize pathways and interactions.

Sources:
Specific disease-oriented interventions will not change inequities in health because the socially disadvantaged are more vulnerable to almost all diseases.

Universal social programs are critical to reducing inequities in health, although they may have to be tailored to the special needs of particular disadvantaged groups. A health system oriented around a strong primary care base is one example of such a strategy.

Sources:
