

WHAT DOES EQUITY IN HEALTH MEAN?

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Introduction

Is health for all a goal that can be achieved? Taking the question literally, the answer is clearly no. So why has WHO chosen "health for all" as its apparently prime target? Presumably because by sloganizing in this way, WHO increases the probability of achieving its real goal. Such a procedure is of course wholly legitimate and it is not the intent of this article to be critical of this tactical device. In so far as the paper is critical of WHO, it is solely with regard to the lack of clarity about the equity objective that lies behind "health for all".

An unjust comment? Perhaps, but surely not for the rational reader. It is possible to express means as a slogan, but it is potentially dangerous, and perhaps even impossible, to do so with objectives. It is here that WHO has to be taken to task. What is the Organization's real equity goal?

The lack of certainty and clarity about the WHO position becomes apparent when various WHO documents are examined. For example, in the European strategy for health for all it is stated: "The target on health inequalities presents a challenge: to change the trend by improving the health opportunities of disadvantaged nations and groups so as to enable them to catch up with their privileged counterparts" (1). There seems little scope for interpreting this in any way other than that the target is equal health. Yet it seems legitimate to ask what that general level of equal health will be and whether more equitable sharing of health might not mean overall less health for the same quantity of resources.

Maybe it is better just to treat this statement as a slogan and not a real goal, and to seek other definitions of equity in WHO documents. In the Global Strategy for Health for All (2) we read: "The existing gross inequality in the health status of people... must be *drastically reduced*" (emphasis added). There is thus a change: no longer is there to be a catching up, but rather a drastic reduction. That may be less clear but almost certainly it is more feasible.

Within the European document (1) it is also stated that the goal of equity is to be achieved partly "by ensuring that everybody has access to primary health care". Thus equity of access to the health-care system is introduced and supplements health as the dimension through which equity is to be achieved and/or defined.

But the Global Strategy document (2) proposes yet another view of equity, one which is fairly commonly encountered in individual country strategies, that "health is a fundamental human right". While that is stated with clarity it is less readily comprehended with clarity. The concept of a right to *health care* is one that is readily understood, but a right to *health per se* is not so easy to grasp.

These introductory comments are not intended to be critical of WHO; rather they point to the difficulties that

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QU'EST-CE QUE L'ÉQUITÉ EN MATIÈRE DE SANTÉ?

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Introduction

La santé pour tous est-elle un objectif réalisable? Si l'on prend l'expression à la lettre, la réponse est évidemment non. Alors, pourquoi l'OMS a-t-elle apparemment choisi pour objectif principal la «santé pour tous»? Sans doute parce qu'en lançant ainsi un slogan, elle augmente ses chances d'atteindre son objectif réel. Un tel procédé est tout à fait légitime et le propos du présent article n'est pas de critiquer cette tactique. Si tant est que l'auteur ait à faire une critique à l'OMS, elle concerne uniquement le manque de clarté de l'objectif d'équité sur lequel repose la notion de «santé pour tous».

Est-ce là une remarque injuste? Peut-être, mais certainement pas pour un lecteur rationnel. On peut en effet adopter un slogan pour exprimer des moyens, mais il est dangereux, voire impossible, d'exprimer ainsi ses objectifs. Et c'est bien sur ce point que l'OMS prête le flanc à la critique: quel est en réalité son objectif d'équité?

Cette incertitude et ce manque de clarté quant à sa position sont évidents à la lecture de plusieurs documents de l'OMS. Ainsi, l'on peut lire dans la stratégie européenne de la santé pour tous: «Pour atteindre l'objectif de réduire les inégalités sanitaires, il est impératif de renverser cette tendance en améliorant les atouts sanitaires des nations et des groupes désavantagés pour les mettre en mesure de rattraper les pays et les groupes plus favorisés» (1). L'objectif serait donc l'égalité devant la santé car il ne semble pas y avoir d'autre interprétation possible. On peut cependant se demander quel sera ce niveau général de santé égal pour tous et si un partage plus équitable des ressources de santé ne risque pas de signifier moins, dans l'ensemble, pour la même quantité de ressources.

Peut-être vaut-il mieux considérer qu'il s'agit bien d'un slogan et non d'un objectif réel et chercher d'autres définitions de l'équité dans les documents de l'OMS. Dans la stratégie mondiale de la santé pour tous (2), nous lisons: «Les inégalités flagrantes dans la situation sanitaire des peuples... doivent être *fortement réduites*» (souligné par l'auteur). Il ne s'agit donc plus de rattraper un retard mais bien de réduire fortement les inégalités. C'est peut-être moins clair mais il est à peu près certain que c'est plus réaliste.

Revenons au document relatif à la stratégie européenne (1) qui stipule que l'objectif d'équité sera atteint grâce en partie à une action garantissant l'accès de tous aux soins de santé primaires. Voilà qui soulève la question de l'équité de l'accès au système de soins de santé et qui complète la notion de santé en indiquant à quel niveau l'équité doit se situer, c'est-à-dire être obtenue et/ou définie.

Le document sur la stratégie mondiale (2) propose une autre définition de l'équité, que l'on retrouve assez fréquemment dans les stratégies nationales, et qui est la suivante: «la santé est un droit fondamental de l'être humain». Cela, certes, s'exprime clairement mais risque d'être compris moins clairement. Si la notion de droit aux *soins de santé* est facile à saisir, celle de droit à la *santé tout court* n'est pas aussi explicite.

Ces quelques remarques liminaires ne se veulent pas critiques à l'égard de l'OMS; l'auteur a surtout voulu montrer

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even that Organization has in being both consistent and clear about equity in health care. Perhaps as important, an examination of policy statements on equity from national governments and health-care agencies reveals similar difficulties in clarifying the meaning of equity.

There is a need to be more explicit about what health policy is, or should be, attempting to achieve as an equity goal. There have been numerous efforts to measure both equity *per se* and whether and how it is changing over time; and some attempts to measure differing degrees of equity across different countries. But there should be concern about what is being measured: if it is equal health, there are obvious difficulties in measuring health even before attempting to determine whether its distribution is fair or unfair. If we standardize by age and sex, how "different" can the health status of an octogenarian male be to be considered "fair" vis-a-vis the health status of an 8-year-old girl? And if we take access as the dimension of fairness what does it mean when we compare different geographical areas (remote mountain villages with densely populated metropolitan districts) or different social classes with vastly varying transport and other forms of resources at their disposal? Can we justifiably choose "equal utilization for equal need" as our criterion of measured equity? Certainly utilization is relatively easily measured, even if need may not be.

And do we need to consider equity in terms of the suppliers? Is it equitable to attempt to force/persuade some health-care professionals to work in locations where they would not otherwise choose to go? Should middle-class, city-born, bred and educated doctors be left free to decide where to practise or be compelled, cajoled or given financial incentives in the cause of equity to work in a remote village or urban slums?

Not all of these questions are addressed in this article. They are presented to indicate that clarifying what equity means or should mean is a difficult but important task. There is no single, uniquely correct answer and no attempt is made to provide it here. However the process of discussing and highlighting the different possible ways of looking at equity should help to make the choice of equity definitions, dimensions, goals and measurement more rational, which is the purpose of this article.

Some initial (largely ethical) concerns

As a starting point, the following definition by Aday et al. (3) may be taken as a basis for considering equity in health care: "An 'equitable distribution' of health-care services is one in which illness (as defined by the patient and his family or by health-care professionals) is the major determinant of the allocation of resources". While one would want to incorporate prevention and health promotion in this view, the statement reflects what often seems to lie behind concerns with equity—essentially that no particular group in society (the poor, some ethnic minority, women, etc.) should be excluded from gaining access to the health-care system either when they are ill or when their health status is threatened. Accepting illness and health promotion as a major determinant of any view of equity in health care is thus uncontroversial. Consequently the above definition although helpful still leaves open a wide range of possible definitions.

A key issue is whether to adopt a "demand" or a "need" stance. The former is normally seen as involving the preferences (through willingness and ability to pay) of the patient and perhaps his family. Need, on the other hand, is based on the value judgements of health-care professionals on behalf of the patient and his family

combien il est difficile, même pour cette Organisation, d'être à la fois cohérent et clair sur un sujet comme l'équité en matière de soins de santé. Une analyse des déclarations de principe des gouvernements ou d'organismes de soins de santé sur l'équité révèle d'ailleurs les mêmes difficultés à clarifier le sens de ce terme.

Il faut donc définir avec plus de précision l'objectif d'équité que la politique sanitaire vise ou devrait viser. De nombreuses tentatives ont été faites pour mesurer à la fois l'équité et son évolution éventuelle dans le temps; on a également tenté de mesurer les différents degrés d'équité d'un pays à l'autre. Encore faut-il bien savoir ce que l'on mesure. Prenons l'égalité en matière de santé: il est déjà bien malaisé de « mesurer » la santé, de sorte que l'on imagine sans peine les difficultés auxquelles on va se heurter pour déterminer si elle est équitablement ou inéquitablement distribuée. Si l'on veut des données corrigées de l'âge et du sexe, quel devra être l'état de santé d'un octogénaire pour qu'on puisse le considérer comme « satisfaisant » par rapport à celui d'une fillette de 8 ans? D'autre part, si l'accès aux services est la base de comparaison, quelle sera la valeur de cet exercice dans les cas où l'on prend en considération des zones géographiques différentes (villages de montagne écartés et métropoles densément peuplées) ou des classes sociales différentes (disposant de moyens de transport ou d'autres ressources très variables)? Est-il justifié de choisir comme critère d'équité: « à besoin égal, utilisation égale »? L'utilisation est certes relativement facile à mesurer, mais il n'en va pas forcément de même pour le besoin.

Par ailleurs, devons-nous considérer l'équité par rapport aux prestataires? Est-il équitable de vouloir forcer ou persuader certains professionnels de la santé de travailler là où ils n'auraient pas normalement choisi de s'installer? Doit-on laisser à un médecin d'un milieu aisé qui est né, a été élevé et a fait ses études en ville, le libre choix du lieu où il va exercer, ou bien faut-il, au nom de l'équité, le forcer ou l'encourager — que ce soit en le flattant ou en lui offrant des incitations financières — à aller travailler dans des villages écartés ou dans des quartiers déshérités des villes?

Toutes ces questions ne sont pas abordées ici et si je les pose, c'est pour montrer qu'il est difficile, mais néanmoins important, de bien préciser le sens du terme « équité ». Car il n'existe pas de réponse qui soit la seule correcte et mon propos n'est pas ici d'en apporter une, mais l'examen et la mise en évidence des différentes approches possibles de l'équité devraient permettre de choisir de façon plus rationnelle les définitions, les dimensions, les objectifs et les mesures de cette équité, ce qui est l'objet du présent article.

Quelques prémisses d'ordre éthique

Pour analyser l'équité en matière de santé on peut prendre comme point de départ la définition suivante de Aday et al. (3): « Il y a distribution équitable des services de soins de santé lorsque la maladie (définie comme telle par le patient et sa famille ou par des professionnels de la santé) est le principal critère d'allocation des ressources ». On serait tenté d'en ajouter deux autres: la prévention et la promotion de la santé, mais cette définition n'en reflète pas moins la préoccupation essentielle qui est le plus souvent à la base du souci d'équité — à savoir qu'aucun groupe de la société (pauvres, minorité ethnique, femmes, etc.) ne doit être privé d'un accès au système de soins de santé si l'un de ses membres est malade ou si sa santé est menacée. Dès lors, dire que la maladie et la promotion de la santé doivent être des considérations fondamentales dans toute approche de l'équité en matière de soins de santé ne prête pas à controverse et la définition ci-dessus, si elle est utile, n'est que l'une des nombreuses définitions possibles.

L'une des questions fondamentales est celle du choix entre le point de vue de la demande et celui des besoins. La demande est généralement perçue comme reflétant les préférences du patient et parfois de son entourage (lesquels sont disposés à payer et en ont les moyens). Les besoins, en revanche, sont déterminés sur la base de jugements de valeur

and/or society at large. The definition by Aday et al. embraces both.

Accepting the distinction between demand and need, any of the following might be incorporated within their definition:

- equal expenditures/resources for equal need/demand (i.e. allocating resources to a particular group or geographical area in proportion to its health needs/demands);
- equal access for equal need/demand (i.e. ensuring that for all individuals with the same need/demand, they will have the same opportunity to use health services);
- equal utilization for equal need/demand (which would involve devising a system whereby use of health services would be allocated *pro rata* with need or demand);
- equality in health (which would presumably have to be adjusted in certain ways and standardized at least for age and sex).

Each of these (even the last because the concept of health will vary depending on whether it is seen from a demand or a need perspective) incorporates two potentially different definitions: one based on demand, the other on need.

The list is not intended to be exhaustive; nor is it the intent to examine each of these definitions in detail (although it is worth noting in passing that the definition which seems most often to be adopted as a policy objective in health-care systems is that related to equality of access). Rather what it shows is that within the generally acceptable but broad definition of equity provided by Aday et al., there remains plenty of scope for disagreement and further debate.

Let us take the question of demand vs. need a little further. While it would be possible—especially from a philosophical standpoint of utilitarianism—to pursue equity in health care in terms of demand, i.e. based on the preferences of consumers directly, the very nature of equity as a *social* as opposed to an *individual* phenomenon points to the adoption of some social view of need in any basis for defining equity. If illness is to dominate the equity concern, then to leave each individual (different for example in terms of his ability to pay for health care because of different income levels) to determine alone his own preferences and willingness to pay for health and health care would seem to run counter to the equity argument. Consequently, this article concentrates on equity defined in the context of need.

Beyond these concerns, which reflect both ethical and more practical issues, we need to consider which ethical theories of distributive justice have potential relevance to the discussion of equity in health care. These are summarized by Veatch (4).

(i) *Entitlement theory*. This is largely a theory of "non-equity" since it proposes that individuals are entitled to what they have, provided they acquired it justly. It would thus seem to be a largely conservative theory defending the *status quo*. According to this theory, for example, it would seem that in capitalist countries market forces, largely unregulated, could be left to determine the allocation of health-care resources.

(ii) *Utilitarianism*. This is based on the principle of the greatest good of the greatest number and as such is normally (but see the discussion of Margolis below) seen in terms of efficiency (maximizing social benefit from the available resources) rather than equity. Indeed it is the basis of much neoclassical (largely free-market) economics which is frequently criticized because of its lack of concern with issues of redistribution.

prononcés par des professionnels de la santé au nom du patient et de sa famille ou de la société dans son ensemble. La définition de Aday et al. associe ces deux points de vue.

Si l'on accepte la distinction entre demande et besoins, on peut incorporer dans la définition l'un quelconque des principes suivants:

- à besoins ou demande égaux, dépenses ou ressources égales (c'est-à-dire que les ressources sont allouées à un groupe ou à une zone géographique particuliers proportionnellement à ses besoins ou à sa demande dans le domaine de la santé);
- à besoins ou demande égaux, accès égal (c'est-à-dire que tous les individus ayant les mêmes besoins aient les mêmes possibilités d'accès aux services de santé);
- à besoins ou demande égaux, utilisation égale (ce qui suppose que l'on conçoive un système permettant d'utiliser les services de santé au prorata des besoins ou de la demande);
- égalité devant la santé (laquelle devra sans doute être corrigée de certaines variables et en tout cas de l'âge et du sexe).

Chacun de ces principes se prête à deux définitions potentiellement différentes, l'une fondée sur la demande et l'autre sur les besoins, y compris le dernier car la notion de santé risque de varier en fonction de l'optique choisie.

Cette liste ne se veut pas exhaustive; l'intention n'est pas non plus d'analyser chacune des définitions dans le détail (encore qu'il soit intéressant de noter au passage qu'apparemment, le principe le plus souvent retenu comme objectif par les systèmes de soins de santé soit l'égalité d'accès). Cette liste est plutôt destinée à montrer que la définition acceptable pour tous mais un peu vague de l'équité qui nous est donnée par Aday et al. prête largement le flanc à la critique et devrait faire l'objet d'une analyse plus poussée.

Essayons d'approfondir l'opposition demande/besoins. Alors qu'il serait possible — en particulier si l'on se place d'un point de vue utilitariste — de chercher à fonder l'équité en matière de soins de santé sur la demande, c'est-à-dire directement sur les préférences des usagers, la nature même de l'équité en tant que phénomène *social*, et non *individuel*, contraint à adopter dans toute définition une conception « sociale » des besoins. Si la notion de maladie doit dominer le floci d'équité, en laissant à chaque individu (par exemple en fonction de sa capacité à payer les soins de santé, c'est-à-dire de son niveau de revenu) le soin de décider par lui-même, on semble aller à l'encontre du principe d'équité. C'est pourquoi on s'en tiendra, dans le présent article, à l'équité considérée du point de vue des besoins.

Au-delà de ces questions, qui sont à la fois d'ordre éthique et pratique, il nous faut nous demander quelles théories éthiques de la justice distributive pourraient être appliquées à l'étude de l'équité en matière de soins de santé. Ces théories ont été résumées par Veatch (4).

i) *La théorie du droit à l'acquis*. C'est essentiellement une théorie de la non-équité puisqu'elle part du principe que les individus ont droit à ce qu'ils ont acquis, pour autant qu'ils l'aient fait légitimement. On peut donc considérer qu'il s'agit là d'une théorie très conservatrice favorable au *statu quo*. En vertu de cette théorie, par exemple, le libre jeu des forces du marché, en grande partie incontrôlées, pourrait déterminer dans les pays capitalistes l'allocation des ressources sanitaires.

ii) *Utilitarisme*. Le principe en est le suivant: un maximum d'avantages pour un maximum de gens; on raisonne donc généralement (voir cependant l'analyse de Margolis ci-après) en termes d'efficience (accroître au maximum les avantages sociaux tirés des ressources disponibles) plutôt que d'équité. Cette théorie, dont s'inspirent nombre de théories économiques néoclassiques (essentiellement libéralistes), est souvent critiquée parce qu'elle fait peu de cas des questions de redistribution.

(iii) *Maximin theory*. This is often exemplified by Rawls' theory of justice (of which more below) with its idea that the goal is to maximize the minimum position, in other words, give priority to the least well-off in society. It is very clearly a positive theory of just distribution.

(iv) *Equality*. This theory of justice is concerned with equality, which in the context of health care can be presumed to mean equality in health. Again it is immediately clear that such a theory is positively concerned with fairness in distribution.

It would seem that (i) and (ii) above are rather limited in their relevance to equity of resource allocation in health care, especially the entitlement theory. Despite that, those systems of health care which rely primarily on market forces are based largely on this entitlement theory. This merely emphasizes the fact that the problems and prospects of pursuing equity will vary in nature and difficulty under different organizational and financing structures.

Some theories of distribution

There are various theoretical and conceptual underpinnings for a defence of or at least a debate on the inclusion of equity in resource allocation as a suitable goal for health care. Since these all involve philosophical standpoints, the existence of more than one argument is not surprising. Given changing premises it is also unsurprising that getting agreement on any particular concept, definition or objective will be difficult. While this article does reach some conclusions about an appropriate definition, they are inevitably laced with value judgements. But that then points to what might be considered the first and most basic conclusion about equity: that it is a value-laden concept which has no uniquely correct definition (in some objective and/or scientific sense).

Equity is difficult to define. Nonetheless it wins almost universal approval as an objective *in principle* in health care. Equity (however defined) has something to do with justice. While it also has links to equality, equity is not the same as equality, which may well be an advantage in winning approval from those concerned about the potential dangers of egalitarianism. Few would disagree, at least in principle, that "fair" and "just" are adjectives with a desirable ring to them, especially in the context of health and health care. Who could deny the virtuous ring of "health for all"?

Various theories have been put forward for considering equity in the distribution of health-care resources. Here we will examine just five.

A theory of maximin

In recent times, the name most clearly associated with the philosophy of equity and inequality is that of Rawls (5). His theory rests on the principle of maximin, i.e. maximizing the position of the worst-off in society. Rawls' theory is concerned with a separation of society's responsibility from the individual's. Indeed this question of the distribution of "property rights" on the decision-making process regarding equity is important. In other words: whose responsibility is it to define equity and pursue policies to promote equity?

Rawls considers a set of goods which he suggests are the responsibility—for production and distribution—of society at large rather than of individuals. These include: basic liberties; freedom of movement and of occupation; powers and prerogatives of office; income and wealth; and the basis of self-respect.

For these so-called "primary goods" Rawls suggests that there is some wish or responsibility in society to do well for the worst-off (hence the notion of "maximin", of

(iii) *La théorie du «maximin»*. L'exemple souvent cité est celui de la théorie de la justice de Rawls (décrite ci-après) selon laquelle il faut faire le maximum pour ceux qui n'ont que le minimum, c'est-à-dire accorder la priorité aux plus défavorisés. Il s'agit à l'évidence d'une théorie positive de la juste distribution.

(iv) *Egalité*. Cette théorie de la justice est soucieuse d'égalité; dans le cas des soins de santé, on peut supposer qu'il s'agit de l'égalité devant la santé. Là encore, il est évident que cette théorie vise une juste distribution.

Il semblerait donc que les théories i) et ii) ci-dessus ne reflètent qu'imparfaitement la notion d'équité dans la distribution des ressources en soins de santé, surtout la première. Or, les systèmes de soins de santé qui sont largement tributaires des lois du marché reposent en grande partie sur cette théorie du droit à l'acquis. Il n'en est que plus évident que les problèmes et les perspectives de la recherche de l'équité sont de complexité et de nature variables selon les infrastructures institutionnelles et les modes de financement.

Quelques théories de la distribution

Divers arguments théoriques et conceptuels peuvent être invoqués pour faire de l'équité dans la distribution des ressources un objectif des services de santé ou du moins pour qu'un débat s'instaure sur cette question. Etant donné que tous ces arguments impliquent des prises de position philosophiques, il n'est pas surprenant qu'il y en ait plus d'un et vu la diversité des hypothèses de départ, on ne saurait non plus s'étonner de la difficulté à se mettre d'accord sur un concept, une définition ou un objectif. Si le présent article contient un certain nombre de conclusions sur une définition appropriée, celles-ci sont inévitablement entremêlées de jugements de valeur. Ceci nous conduit à ce que l'on peut considérer comme la première et la principale conclusion sur l'équité: c'est une notion hautement subjective pour laquelle il n'existe pas de définition (objective et/ou scientifique) applicable à tous les cas.

L'équité est difficile à définir. On peut toutefois dire qu'il s'agit d'un objectif *de principe* universellement admis dans le domaine des soins de santé. L'équité (quelle qu'en soit la définition) n'est pas très éloignée de l'idée de justice. Elle a également un rapport avec l'égalité, sans en être synonyme, ce qui pourrait bien être un avantage aux yeux de ceux qui s'inquiètent des dangers possibles de l'égalitarisme. Rares sont ceux qui disconvieraient, du moins sur le plan des principes, que les adjectifs «équitable» et «juste» n'aient une connotation positive, surtout dans le contexte de la santé et des soins de santé. Et qui songerait à nier la connotation morale de la «santé pour tous»?

Plusieurs théories militent en faveur de l'équité dans la distribution des ressources sanitaires. Nous nous contenterons d'examiner ici cinq d'entre elles.

La théorie du «maximin»

Le nom le plus souvent associé ces dernières années à la philosophie de l'équité et de l'inégalité est celui de Rawls (5). Sa théorie repose sur le principe du «maximin», qui consiste à améliorer au maximum la situation des plus mal lotis dans la société. Elle dissocie la responsabilité de la société et celle de l'individu. Il importe en effet de savoir à qui il appartient de décider de ce qui est équitable ou non. En d'autres termes, qui va définir l'équité et appliquer les politiques propres à la promouvoir?

Rawls estime que c'est la société dans son ensemble et non l'individu qui doit assumer la responsabilité (production et distribution) d'un certain nombre de «biens»: libertés fondamentales; liberté de mouvement et liberté du travail; pouvoirs et prérogatives liés à la fonction; revenu et richesse; et ce qui constitue la base de la dignité personnelle.

Pour ce qu'il appelle ces «biens essentiels», Rawls pense que toute la société a, consciemment ou non, une responsabilité à l'égard des plus défavorisés (d'où la notion de «maxi-

maximizing the position of the *minimum* person). In such a society, individuals would ignore their own position and choose to maximize the welfare of the worst-off, at least in respect of these primary goods.

Now as Daniels (6) points out, health care is not present in Rawls' list of primary goods. Indeed, as he indicates, in Rawls' idealized case "there is no distributive theory for health care because no one is sick". It could of course be added to the list but that would change the nature of Rawls' position quite markedly and could lead to the impoverishment of a society.

Rather than abandon Rawls, Daniels suggests that health-care institutions be included among the basic institutions whose task it is to provide equality of opportunity, but it is important to note that in the context of these institutions "opportunity, not health care or education, is the primary social good" (6). That would then point to a distribution of resources for health care based on some concept of opportunity and thereby a definition of equity which was seen to be in terms of equality of access to health care, presumably related to some health or illness concept which might be designated "health need".

Altruism as a basis for equity

Titmuss' (7) concern for equity arose from his interest in the provision of blood under different health-care systems and societies and, in particular, voluntary (unpaid) donation versus commercialism (payment of donors). He used this as a basis to build a defence of the National Health Service (NHS) in the United Kingdom and thereby a defence of equity in health care (or as he called it "the gift relationship"). Indeed the width of his view of health care is as great as that of Rawls. An important difference between them is that while Rawls emphasizes opportunity, essentially a demand-side phenomenon, i.e. one seen from the perspective of those who do or may use the system—patients or potential patients, Titmuss emphasizes the supply side. Thus the establishment of the NHS (and its concerns for equity) "has allowed and encouraged sentiments of altruism, reciprocity and social duty to express themselves; to be made explicit and identifiable in measurable patterns of behaviour by all social groups and classes".

It can be argued that this is essentially a Kantian view of the world with a strong emphasis on a duty or responsibility to provide an equitable health-care system. Thus in the context of voluntary blood donation, if each individual realized how small was the impact on a blood-transfusion service of giving blood himself, then few if any would bother to do so. But realizing in turn that if everyone failed to give blood the impact would be great, the individual feels duty bound, or one might say altruistic, and gives blood.

In the specific context of blood donation it is relatively easy to see that if Titmuss is right then a system of voluntary blood donation may well be more effective and efficient than one based on paying donors. It is in the widening of this process to health care as a whole that there are some question marks, particularly in respect of individuals' stock of altruism, whether it is increased by use (essentially Titmuss' view) or in limited supply and therefore one altruistic act has an opportunity cost in terms of a forgone alternative altruistic act.

It is evident that Titmuss saw a national health service as a morally superior way of delivering health care but largely on the grounds of its being a morally superior way not just of delivering but also of encouraging altruism. This may be more an emotional than a rational basis for defending equity in health care but, returning to some of the statements made by WHO in the context of health for all, that in itself does not make it an inappropriate response to a defence of equity, at least in terms of equality of access.

min»: on veut améliorer au *maximum* la situation de ceux qui n'ont que le *minimum*). Dans une telle société, les membres choisiraient d'ignorer leur propre situation et voudraient accroître le plus possible le bien-être des déshérités, au moins en ce qui concerne ces biens essentiels.

Mais comme le fait observer Daniels (6), les soins de santé ne figurent pas sur la liste des biens essentiels de Rawls. Ainsi qu'il le fait remarquer, dans l'idéal de Rawls «il n'existe pas de théorie distributive des soins de santé car personne n'est malade». On pourrait bien entendu les ajouter à la liste mais cela modifierait assez sensiblement la position de Rawls et risquerait d'entraîner une paupérisation de la société.

Plutôt que de renoncer à la théorie de Rawls, Daniels suggère que les établissements de soins de santé figurent parmi les institutions de base qui ont pour tâche d'assurer l'égalité des chances, mais il convient de noter que, dans le contexte de ces institutions, «c'est l'égalité des chances qui est le bien social essentiel, et non les soins de santé ou l'éducation» (6). Cela conduit à fonder la distribution des ressources sanitaires sur une notion d'opportunité et donc à définir l'équité en termes d'égalité d'accès aux soins de santé en la rattachant sans doute à une notion de la santé ou de la maladie que l'on pourrait appeler «besoins sanitaires».

L'altruisme, fondement de l'équité

Le souci d'équité de Titmuss (7) lui a été inspiré par son intérêt pour le don de sang dans différents systèmes de soins de santé et différentes sociétés et en particulier pour le don de sang bénévole (non rémunéré) comparé à la vente du sang (rétribution des donneurs). Il s'est basé sur cet exemple pour construire sa défense du *National Health Service* (NHS) au Royaume-Uni et partant, sa défense de l'équité en matière de soins de santé (qu'il appelle la relation basée sur le don). La largeur de ses vues sur les soins de santé est certes égale à celle de Rawls. La principale différence est que Rawls met l'accent sur l'opportunité, qui est essentiellement un phénomène intéressant la demande (c'est-à-dire ceux qui utilisent ou peuvent utiliser le système — patients ou patients éventuels) alors que Titmuss met l'accent sur l'offre. Ainsi, la création du NHS (et son souci d'équité) «a encouragé les sentiments d'altruisme, de réciprocité et de devoir social et leur a permis de s'exprimer dans tous les groupes et classes de la société, sous la forme de schémas de comportement qui peuvent être identifiés et mesurés».

On peut arguer que c'est là, essentiellement, une conception kantienne du monde qui met nettement l'accent sur le devoir ou la responsabilité que représente la mise en place d'un système de soins de santé équitable. Ainsi, dans le cas du don de sang bénévole, si chacun avait conscience du faible impact qu'a son propre don du sang sur le service de transfusion sanguine, rares seraient ceux qui se donneraient la peine de s'y rendre. En revanche, le sentiment de ce qui se passerait si personne ne donnait son sang, fait que chacun se sent moralement obligé, mû par ce que l'on peut appeler l'altruisme, de donner son sang.

Dans le cas particulier du don de sang, il est assez facile de voir que si Titmuss a raison, un système de don de sang bénévole pourrait bien être plus efficace et plus rentable qu'un système fondé sur la rémunération des donneurs. C'est l'extension de ce processus à l'ensemble des soins de santé qui suscite certaines réserves, notamment en ce qui concerne la capacité d'altruisme d'un individu: augmente-t-elle avec l'usage (point de vue de Titmuss) ou bien est-elle limitée? Dans ce cas, tout acte d'altruisme aurait un coût d'opportunité dans la mesure où il obligerait à renoncer à un autre.

Il est évident que si Titmuss considère un service national de santé comme un moyen de dispenser des soins de santé qui est moralement préférable, c'est surtout parce que outre sa fonction de prestataire de soins, il encourage l'altruisme. Peut-être est-ce là un argument subjectif et peu rationnel en faveur de l'équité en matière de santé mais, si l'on considère certaines déclarations faites par l'OMS dans le contexte de la santé pour tous, cela n'en fait pas un mauvais argument en faveur de l'équité, du moins si on la considère en termes

Thus if one accepts the notion of Titmuss' altruism the most likely dimension of it is in terms of individuals having equal opportunity (for equal need) to use health-care facilities.

The fair shares theory of distribution

For a more utilitarian as opposed to the rather Kantian view of Titmuss, there is Margolis' (8) theory of "fair shares" which, while he does not directly apply it to health care, is relevant in this context. The idea is simple. Individuals obtain utility or satisfaction in two ways: first they get utility from normal acts of consumption of goods and services and consequently devote some of their income, time and efforts to pursuing such acts and deriving utility from the outcome of such acts; second, satisfaction is derived from doing their fair share for some wider group such as society at large—taking part in various social and charitable functions and acts, voting in elections for local and national representatives, etc.

It is this second form of utility which appears to be unique to Margolis' theory. It is important to stress that the utility in this idea of fair sharing is *process* utility and not as in the former case outcome utility. In other words in the second instance the relevant source of the utility lies in the participation process itself, not in its outcome. Just as the individual devotes some of his income, time and efforts to consumption for outcome utility, so will he similarly devote income, time and efforts to participating in wider social acts. The driving force in the latter case is a desire to "do one's bit" for the social group where the individual has an equal chance of benefiting along with everyone else.

Of course there is then a prospect that more selfish individuals (i.e. those who derive little utility from doing their fair share) can exploit the more selfless individuals. Where this problem arises, there may be a case for some form of coerced solution (e.g. a national health service).

Health care may well be a social activity where the desire to do one's fair share is strong. This may be partly because of the basic health aspects: we are concerned as individuals for the suffering of our fellow human beings. It may be that it has more to do with a desire to allow individuals to have relatively easy access to health-promoting facilities, i.e. primarily health services. It may also be because of a general lack of knowledge on the part of individuals about health and health care and the prospect of exploitation through ignorance.

Given the emphasis that Margolis places on his concept of "participation utility", the most likely dimension of equity to emerge from his theory is equality of access for equal need. It is difficult to say precisely because he does not consider health care specifically (for more discussion of Margolis applied to health care see Mooney (9)).

A commitment to equity

In the context of equity generally but especially in the case of health care, there is a potentially crucial distinction to be made between what Sen (10) calls "sympathy" and "commitment". There are, even though Sen appears not to make the distinction, parallels here between a utilitarian and a Kantian view of the world. In that sense it may be possible to interpret Titmuss in terms of commitment.

Sympathy is not wholly unselfish in the sense that if another individual's welfare increases and we sympathize with that individual then we gain utility from that individual's gain in welfare. Conversely, and more simply, a sympathetic individual is saddened by another's sadness. It is clear in this context that the use of the term "wholly unselfish" has to be treated with caution: it can easily be argued that a society in which individuals gain (lose) utility from others' happiness (sadness) is a more caring society

d'égalité d'accès. Dès lors, si l'on admet la notion d'altruisme de Titmuss, son expression la plus probable sera, à besoins égaux, l'égalité des chances d'utilisation des sources de soins de santé.

Théorie de la distribution dite des «justes parts»

La théorie des «justes parts» de Margolis (8) procède d'une conception plus utilitaire, qui s'oppose à la conception kantienne de Titmuss. Si elle ne s'applique pas directement aux soins de santé, elle présente cependant un intérêt dans ce contexte. L'idée en est simple. Il y a, pour l'individu, deux façons d'obtenir un avantage ou une satisfaction: premièrement, il tire avantage de la consommation normale de biens et services et y consacre donc une partie de ses revenus, de son temps et de ses efforts; deuxièmement, il tire également une satisfaction de sa contribution pour une juste part à ce qui se fait au profit d'un groupe — par exemple la société en général — en prenant part à diverses manifestations sociales et charitables, en élisant des représentants locaux et nationaux, etc.

C'est cette deuxième forme d'avantage qui semble être particulière à la théorie de Margolis. Il faut souligner en effet que l'avantage en question est alors lié à un *processus* et non plus, comme dans le cas précédent, à un résultat. En d'autres termes, la source de l'avantage réside, dans le second cas, dans le processus de participation lui-même et non dans son résultat. De même qu'il consacre une partie de son revenu, de son temps et de ses efforts à la consommation pour en tirer un avantage, l'individu consentira aussi des sacrifices pour participer à des activités intéressant le reste de la société. Il est alors mû par le désir de faire son devoir dans le groupe social où chacun a une chance égale de profiter de ce qui est fait par tous.

Certes, on risque alors que les égoïstes (c'est-à-dire ceux qui tirent peu d'avantages de leur juste part de l'effort commun) exploitent les plus désintéressés. Lorsqu'un tel problème se pose, on peut devoir recourir à une forme de contrainte (par exemple, un service national de santé).

Les soins de santé peuvent très bien être considérés comme une activité sociale à laquelle chacun souhaite vivement apporter sa juste contribution, en partie sans doute parce que la santé touche à quelque chose de fondamental: en tant qu'êtres humains, nous sommes sensibles à la souffrance de nos semblables. Mais il se pourrait que cela relève davantage d'un désir de garantir un accès relativement aisé à des moyens de promotion de la santé, c'est-à-dire surtout aux services de santé. Cela peut aussi être le résultat d'un manque de connaissances sur la santé et les soins de santé chez les individus en général, et la peur de l'exploitation liée à l'ignorance.

Compte tenu de l'accent mis par Margolis sur la notion d'«avantage tiré de la participation», il est vraisemblable que l'équité dans sa théorie sera à besoin égal, l'égalité d'accès. Il est difficile de l'affirmer car les soins de santé ne sont pas expressément visés (pour une analyse plus approfondie de la théorie de Margolis appliquée aux soins de santé, voir Mooney (9)).

Engagement en faveur de l'équité

Pour l'équité en général mais surtout l'équité en matière de soins de santé, il peut être essentiel d'opérer une distinction entre ce que Sen (10) appelle la «compassion» et l'«engagement». Bien que Sen lui-même ne semble pas faire cette distinction, il y a ici des similitudes entre la théorie utilitariste et la conception kantienne du monde. En ce sens, on peut interpréter la théorie de Titmuss en termes d'engagement.

La compassion n'est pas totalement désintéressée en ce sens que si nous nous réjouissons du bonheur de quelqu'un, nous en tirons donc un avantage. Inversement, et plus simplement, une personne compatissante sera attristée par la peine d'autrui. Il est évident que dans ce contexte l'expression «totalement désintéressée» doit être utilisée avec précaution: on peut aisément arguer que la société dans laquelle les individus tirent un avantage du bonheur d'autrui ou perdent cet avantage devant sa tristesse est une société plus

than one where this is not the case. There is consequently no intended pejorative content in the phrase selfish as it is used here. It means egoistic in a simple descriptive sense. As Sen (10) states: "behaviour based on sympathy is in an important sense egoistic, for one is pleased at others' pleasure and pained at others' pain, and the pursuit of one's own utility may thus be helped by sympathetic action".

On the other hand, commitment entails an actual loss of utility to the individual making the commitment. It involves an individual doing something for others which does not benefit that individual. Sen (10) thus defines it in terms of "a person choosing an act that he believes will yield a lower level of personal welfare to him than an alternative that is also available to him".

In health care, it can be argued that the dimension of sympathy is most likely to be health itself, i.e. we are more likely to be sympathetic to an individual's ill-health status directly, than to questions of an individual's access to or utilization of health services. In the case of commitment, the most likely dimension is access since improving access for those in need is something to which individuals can reasonably contribute their efforts and resources.

Equity as an "externality"?

A final way to view equity is provided by Culyer (11) in the notion of an "externality". An "externality" arises in circumstances where the utility of others enters an individual's utility function. As Culyer states: "individuals are affected by others' health status for the simple reason that most of them care". Hence he refers to this idea as the "caring externality". It is thus very similar to Sen's concept of sympathy. Yet, as an explanation of equity it is problematic in practice since it is difficult to see health or health status as the appropriate dimension of redistribution. How can we directly redistribute *health per se* across different groups in society?

Culyer (12) elsewhere suggests health-care consumption as the appropriate dimension. This changes the perspective and implies that health care is a form of merit good, i.e. one for which some elite (a government, or the medical profession) determines the extent of consumption because, left to their own preferences, individuals (or at least some individuals) would consume less than is socially optimal. Equity would then be defined in terms of equality of utilization for equal need.

What then is equity?

What then is the meaning of equity in health care? The above discussion suggests that various definitions and dimensions are possible. It is difficult to say which is correct—what is "right" is a value-laden question.

However, most of the theories tend to emphasize equity in terms of access rather than health or health-care consumption. Such a conclusion is potentially important for policy in the area. However more important still is the need to clarify *what* definition of equity is to be and/or is being adopted as an objective of health policy, even if that definition is not couched in terms of access.

Lack of such clarification can only blunt the attack on inequities and lead to unnecessary confusion. There are dangers that resources will be badly deployed in pursuing equity if the objectives are not clear. There will be different policies for different equity goals and the potential for conflict between efficiency and equity in health policy will vary depending on how equity is defined. Lack of clarity in the meaning of equity has led to measuring equity in the wrong or inappropriate dimensions (for example, if the goal is equality of access it is not directly relevant to monitor health-care consumption *per se*).

charitable qu'une autre où tel ne serait pas le cas. Il n'y a donc aucune connotation péjorative dans le terme égoïste — ici purement descriptif. Comme l'explique Sen (10): «le comportement fondé sur la compassion est en grande partie égoïste car l'individu se réjouit du plaisir de l'autre et souffre de sa douleur, et la recherche de son propre intérêt peut être favorisée par une attitude compatissante».

A l'inverse, l'engagement suppose que l'intéressé renonce à un avantage, qu'il fait quelque chose pour autrui sans en tirer d'avantage direct. Sen (10) parle d'«une personne choisissant d'accomplir un acte en sachant qu'il lui procurera personnellement un degré de bien-être inférieur à celui qu'elle tirerait d'un autre également à sa portée».

Dans le domaine des soins de santé, on peut penser que c'est sur la santé elle-même et, plus précisément, la mauvaise santé, que s'exercera très probablement la compassion, et non pas sur des questions comme l'accès de telle personne aux services de santé ou son utilisation de ces services. Quant à l'engagement, il sera vraisemblablement dirigé sur l'accès aux soins de santé car améliorer cet accès pour ceux qui en ont besoin est un objectif à la réalisation duquel des individus peuvent raisonnablement contribuer par leurs efforts et leurs ressources.

L'équité est-elle une «externalité»?

Une dernière conception de l'équité nous est donnée par Culyer (11) avec la notion d'«externalité». Il y a «externalité» lorsque l'avantage d'autrui coïncide avec celui de l'intéressé. Selon Culyer: «Si les individus sont touchés par l'état de santé des autres, c'est tout simplement parce que la plupart s'y intéressent». Cette notion est très proche de celle de la compassion chez Sen. Dans la pratique toutefois, elle peut difficilement servir à expliquer le problème de l'équité car il est malaisé de considérer la santé ou l'état de santé comme une dimension appropriée de la redistribution. Comment peut-on en effet redistribuer directement la *santé* en tant que telle entre différents groupes de la société?

Culyer (12) suggère ailleurs de choisir comme dimension la consommation de soins de santé. On change ainsi de perspective et les soins de santé deviennent une sorte de bien tutélaire, c'est-à-dire qu'une élite (le gouvernement ou le corps médical) détermine le niveau de la consommation car s'ils étaient libres d'agir à leur guise les individus (ou du moins certains individus), consommeraient moins que ce qui est jugé socialement optimal. L'équité serait alors définie en termes d'égalité d'utilisation à besoin égal.

Que faut-il alors entendre par équité?

Quel est donc le sens du mot équité dans le contexte des soins de santé? L'analyse qui précède a dégagé plusieurs définitions et dimensions possibles. Dire laquelle est correcte est difficile et implique un jugement de valeur.

Quoi qu'il en soit, la plupart des théories ont tendance à définir l'équité en termes d'accès plutôt qu'en termes de santé ou de consommation de soins de santé. Une telle conclusion peut être importante pour l'élaboration de la politique dans ce domaine. Plus importante encore est la question de savoir *quelle* définition de l'équité doit ou va être adoptée comme objectif de la politique sanitaire, même si l'équité n'est pas définie en termes d'accès.

A défaut d'une telle précision, la lutte contre les inégalités sera moins efficace et l'on risque de sombrer dans la confusion. Si les objectifs ne sont pas clairement énoncés, le déploiement des ressources se fera mal; différentes politiques seront adoptées pour des objectifs différents et le danger d'un conflit entre la recherche de l'efficacité et celle de l'équité dans la politique sanitaire variera selon la définition de l'équité. Une définition peu claire de l'équité a conduit à mesurer celle-ci de façon erronée ou inappropriée (par exemple, lorsque l'objectif est l'égalité d'accès, cette dimension ne peut pas être appliquée directement au contrôle de la consommation des soins de santé).

It can readily be argued that most people, health-care professionals, governments and other agencies associated with the delivery of health and health care would not vote against equity in principle. The extent to which in practice it is achieved while not the subject of this article is more problematic. Part of the reason for this gap between principle and practice is that too little thought has been given to what equity means and/or should mean in health and health care. In this field, ill thought-out objectives only lead to confusion which in turn often leaves the pursuit of equity little further forward.

Most people would agree with the promotion of equity by WHO and with the use of a slogan such as health for all to create the climate to allow equity to flourish. Going further involves clarifying what fairness, justice, equity—call it what one will—in health and health care are to mean in practical terms. That requires some hard thinking about equity goals. Perhaps this article is best seen as an attempt to stimulate and encourage such thinking.

On objectera que la plupart des gens ainsi que les professionnels de la santé, les pouvoirs publics et les organismes associés à la prestation de soins de santé ne se prononceront pas en principe contre l'équité. Dans quelle mesure celle-ci sera-t-elle réalisée en pratique est un autre problème qui sort du cadre du présent article. Cet écart entre théorie et pratique résulte en grande partie de ce que l'on n'a pas assez réfléchi au sens que l'on donne ou doit donner à l'équité dans le domaine de la santé et des soins de santé. Ici en effet, des objectifs mal conçus ne peuvent conduire qu'à la confusion, source d'immobilisme dans la procédure de l'équité.

La plupart des gens approuveront l'OMS si elle s'attache à promouvoir l'équité et adopte un slogan tel que la santé pour tous pour créer un climat propice à l'instauration de l'équité. Mais avant d'aller plus loin, il importe de définir ce que l'on entend dans la pratique par égalité, justice et équité — quel que soit le terme retenu — en matière de santé et de soins de santé. Cela exige une réflexion approfondie sur les objectifs de l'équité, et, de fait, le présent article se veut surtout une incitation à la réflexion.

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Increasing Social Variation in Birth Outcomes in the Czech Republic After 1989

ABSTRACT

Objectives. This study investigated social variation in birth outcome in the Czech Republic after the political change of 1989.

Methods. Routinely collected records on singleton live births in 1989, 1990, and 1991 (n = 380 633) and 1994, 1995, and 1996 (n = 286 907) were individually linked to death records.

Results. Mean birthweight fell from 3323 g to 3292 g ($P < .001$) between 1989 and 1991 and then increased to 3353 g by 1996. The gap in mean birthweight between mothers with a primary education and those with a university education, adjusted for age, parity, and sex of infants, widened from 182 g (95% confidence interval [CI] = 169, 194) in 1989 to 256 g (95% CI = 240, 272) in 1996. Similar trends were found for preterm births. Postneonatal mortality declined most among the better educated and the married. The odds ratio for postneonatal death for infants of mothers with a primary (vs university) education, adjusted for birthweight, increased from 1.99 (95% CI = 1.52, 2.60) in 1989 through 1991 to 2.39 (95% CI = 1.55, 3.70) in 1994 through 1995.

Conclusions. Despite general improvement in the indices of fetal growth and infant survival in the most recent years, social variation in birth outcome in the Czech Republic has increased. (*Am J Public Health*. 1998;88:1343-1347)

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Inequity in health within populations has been identified by the World Health Organization as a prime obstacle to its Health for All by the Year 2000 strategy.¹ The reduction of inequalities in health can be seen as an overall strategy for the improvement of a population's health and as helpful in maintaining and improving the population's human capital.²

Infant mortality is a key indicator of health status and has long been shown to reflect socioeconomic circumstances. Similarly, birthweight is considered to be an important measure of the health status of a population; birthweight is a strong predictor of both mortality and morbidity in infancy and reflects nutritional status and growth rates.³ More recently, indices of fetal growth have taken on a new significance in light of evidence suggesting that they may be predictive of chronic disease in adult life.^{4,5}

We previously reported a significantly lower mean birthweight of Czech newborns and greater social variation in size at birth and frequency of preterm birth in the Czech Republic, compared with Sweden.⁶ These findings indicated an unfavorable state of general health of the Czech population in the late 1980s. The purpose of the present analysis is to assess trends in social variation of several indices of fetal growth and infant mortality in the Czech Republic from 1989 through 1996.

The period of study coincides with the political and economic changes that Czech society has undergone since the collapse of communism in November 1989. It is possible that pregnancy outcomes are affected by such profound social changes. The analyses presented here investigated this possibility.

Methods

The data used for analysis consisted of information on all singleton live births reported to the Czech Statistical Office in 1989 through

1991 and 1994 through 1996; data for 1992 and 1993 were not available. The Czech Republic uses the World Health Organization definition of live birth. All live-born infants with birthweights of 500 g or more were included in this register until 1994; live-born infants with birthweights of less than 500 g have been included since 1995 (n = 6 in 1995, n = 5 in 1996). Information on maternal age, birth order, sex of the child, single or multiple birth, birthweight, gestational age (based on date of last menstrual period), and mother's marital status and education is also available from the register. Birthweight is rounded to the nearest 10 g. The data on demographic and social characteristics are collected by the medical staff from medical records or identification cards or are reported by the pregnant women themselves.

Maternal education was classified into 4 categories: primary education (up to 10 years of schooling), vocational training (an additional 2 to 3 years of apprenticeship), secondary education (A-level equivalent), and university (at least 4 years of education after secondary school, and a completed degree). Mother's marital status was classified as single, married, divorced, or widowed. Throughout

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TABLE 1—Distribution (%) of Age, Education, and Marital Status Among Mothers of Singleton Live-Born Infants in the Czech Republic, 1989–1996

	1989 (n = 125 873)	1990 (n = 128 008)	1991 (n = 126 752)	1994 (n = 104 558)	1995 (n = 94 034)	1996 (n = 88 315)
Maternal age, y						
<20	13.7	14.2	15.6	13.5	11.1	9.1
20–24	45.6	45.0	44.8	44.5	44.0	43.5
25–29	26.3	26.9	26.4	26.9	28.3	29.7
30–34	10.4	9.9	9.2	10.7	12.1	13.0
35–39	3.5	3.5	3.4	3.6	3.7	4.0
40+	0.5	0.5	0.6	0.7	0.7	0.8
Mother's education^a						
Primary	14.4	13.7	13.4	13.6	14.0	13.9
Vocational	38.1	38.8	39.8	43.1	42.8	41.9
Secondary	38.4	38.6	38.2	35.1	34.4	35.0
University	9.1	8.9	8.6	8.2	8.8	9.2
Mother's marital status						
Single	5.5	6.1	7.2	10.7	11.4	12.5
Married	92.1	91.5	90.2	85.4	84.4	83.0
Divorced	2.1	2.2	2.4	3.6	3.8	4.2
Widowed	0.3	0.2	0.3	0.3	0.3	0.3

^aInformation on maternal education was missing for 2 infants born in 1996.

the analyses, we used 5-year age categories (<20, 20–24, . . . 40+ years) and 6 categories of parity (parity 1, 2, . . . 6+). *Preterm birth* refers to a birth occurring at a gestational age of less than 37 weeks.⁷

Although no formal evaluation of the quality of data from the Czech birth registry is available, the register is virtually complete and it is generally believed that the quality of the information is good. There was no indication that the quality of data in the register changed significantly over the study period.

To permit the study of neonatal and postneonatal mortality, data from the birth registry were linked to the death register for all except the 1996 births by means of unique personal numbers. The linkage was successful for nearly 90% of infant deaths. The infant deaths that were not successfully linked to the death register included a high proportion of infants with extremely low birthweights and early neonatal deaths. Mean birthweight was lower among infant deaths not linked to the birth register (2038 g, SD = 1142 g) than among those successfully linked (2082 g, SD = 1083 g). The proportion of neonatal deaths was higher among those not linked to the birth register (79% vs 62%). Neonatal mortality is probably underestimated by 12% and postneonatal mortality by up to 6% in this study. If the unlinked deaths were more likely to be from multiple births (which is conceivable, given the lower birthweights among the unlinked deaths), the underestimation of mortality rates in our study would be even smaller.

The effect of maternal characteristics on infants' size at birth was quantified by linear regression. Logistic regression was used to

study the variation in risk of preterm birth and death in infancy (0–365 days), the neonatal period (0–27 days), and the postneonatal period (28–365 days). All analyses were performed with and without adjustments for potential confounders. Analyses were carried out with the Stata statistical package.⁸

The release of the data was in accordance with statutory obligations to protect confidentiality. Individuals could not be identified from the data provided for analysis.

Results

Demographic Characteristics

Substantial demographic changes occurring in the Czech Republic over the study period are reflected in our data. There were 380 633 singleton live births reported to the Czech Statistical Office from 1989 through 1991, and only 286 907 in the 3 years from 1994 through 1996.

The mean age of mothers increased slightly, from 24.2 years (SD = 4.7) in 1989 to 24.7 years (SD = 4.9) in 1996 ($P < .001$). No appreciable changes were seen in parity: there were 47.9%, 37.3%, and 14.8% mothers of parity 1, 2, and 3 or more, respectively, in 1989, and 47.1%, 38.4%, and 14.5%, respectively, in 1996. There was an increase in the proportion of mothers with vocational training and a slight decrease in the proportion of mothers with secondary education (Table 1).

The most dramatic change concerns the proportion of infants born outside marriage. In 1989, only 5.5% of live-born singletons were

born to single mothers and 2.1% were born to divorced mothers; these proportions rose to 12.5% and 4.2%, respectively, in 1996. The mean age of single mothers increased in the last 3 years of the study. The proportion of teenagers among single mothers was highest in 1991 (43.3%) and lowest in 1996 (30.7%).

Birthweight

After a slight decrease in overall mean birthweight between 1989 and 1991 (from 3323 g to 3292 g, $P < .001$), overall mean birthweight increased to 3353 g in 1996. The significant increase in mean birthweight between 1994 and 1996 was seen in all age groups except the oldest (40+ years).

The decrease in mean birthweight from 1989 to 1991 was experienced by all educational categories, the less educated women tending to be more affected. The subsequent improvements in birthweight were seen in all except the primary education category (Figure 1). The widening of the difference in mean birthweight between educational categories persisted after adjustments for maternal age, parity, and sex of the infant (Table 2). The effect of mother's marital status on birthweight was substantial and remained relatively constant over the study period. A mutual adjustment for education and marital status slightly attenuated the strength of the effects but did not change the trends observed.

Preterm Births

The overall proportion of preterm births increased from 4.3% to 4.8% between 1989

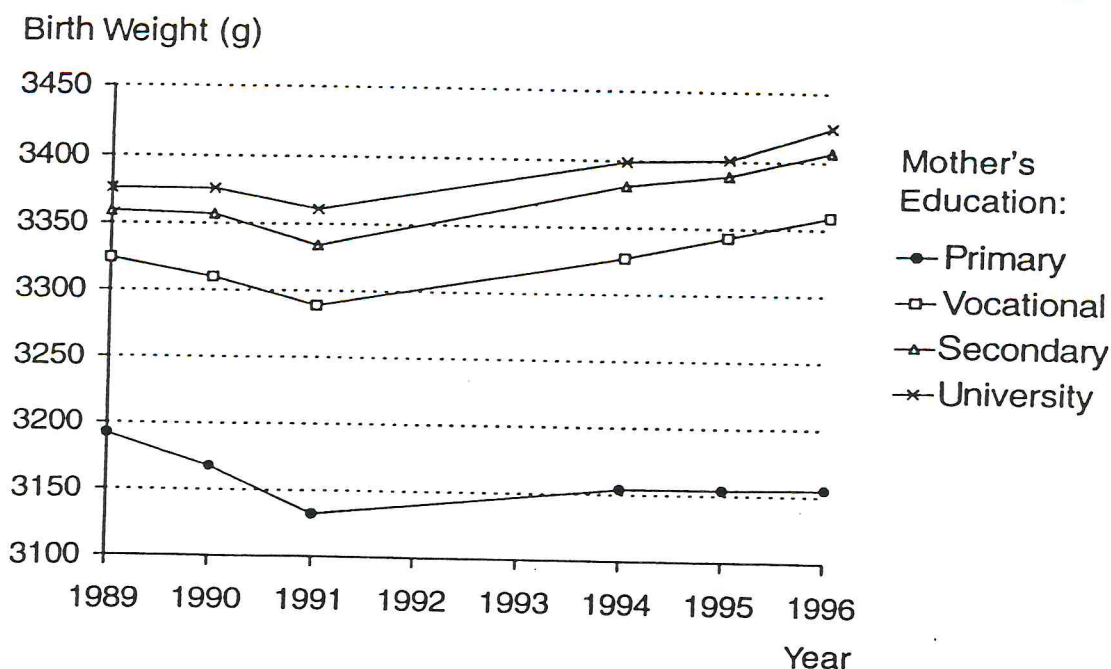


FIGURE 1—Mean birthweight of singleton live births by maternal education: Czech Republic, 1989–1991 and 1994–1996.

and 1991 but was 4.5% in 1994 through 1996. There was a tendency toward increasing variation in frequency of preterm births by maternal education. The odds ratio for preterm birth in mothers with a primary (vs university) education, adjusted for maternal age, parity, and sex of the infant, increased from 2.05 (95% confidence interval [CI] = 1.81, 2.32) in 1989 to 2.53 (95% CI = 2.18, 2.94) in 1996. On the other hand, the age-, parity-, and sex-adjusted odds ratio for preterm birth in single, vs married, mothers was lowest in 1996 (1.78; 95% CI = 1.63, 1.94).

Infant Mortality

Both neonatal and postneonatal mortality decreased between the 2 time periods (1989–1991 and 1994–1995). The decline in neonatal mortality was greatest (from 5.6 to 3.8 deaths per 1000 live births) and affected all educational and marital status categories to a similar degree. The social variation in neonatal mortality was largely eliminated by adjustment for maternal age, parity, and sex and birthweight of the infant.

In the population as a whole, postneonatal mortality decreased slightly over the study period. Among single mothers, postneonatal mortality increased between the 2 periods (1989–1991 and 1994–1995). There were marked and increasing differences in postneonatal mortality by maternal education and marital status (Table 3), which persisted after mutual adjustment for education and marital status.

Discussion

Our analyses of Czech national data for 1989 through 1996 show that despite overall improvements in indices of size at birth and infant survival, socioeconomic differences in mean birthweight and postneonatal mortality between infants born to mothers with a primary education and those born to mothers with a university education increased.

Validity

The validity of the time trend analysis clearly depends on the completeness and comparability of the data. The data were collected by a routine registration system that had been in operation since the mid-1980s. We are not aware of any administrative or other changes that would compromise the quality or completeness of the data in recent years. The inclusion of live births of 500 g or less in the register from 1995 did not appreciably affect the time trend.

We have addressed the potential bias of mortality analyses in the Czech data due to the linkage failure. Analysis of the infant deaths that were not successfully linked indicated that the unlinked deaths were more likely to be from multiple births and were more likely to occur in the early neonatal period. In singletons, the likely underestimation of the risk of death was about 10% in the neonatal period and was considerably smaller in the postneonatal period. We conclude that link-

age failure could not explain the strong social trends observed in our data.

Decline in Fertility

The substantial recent decline in fertility rates^{9,10} is reflected in the numbers of births over the period of our study. It is not known whether decreasing fertility affected different social groups to the same extent. Although the potential confounding effects of age and parity were taken into account in our analysis, it is conceivable that within the educational categories defined in our analyses, women with different levels of social resources or social support differed in their realized fertility. For example, it is possible that better educated women, who could foresee potential material or other difficulties related to childbearing, were more likely to avoid or postpone pregnancy. Such hidden effects of the sociodemographic processes cannot be excluded and require closer attention in future research.

The difference in mean birthweight between infants of single and married mothers did not seem to change appreciably over time, but the effect of mother's marital status on the risk of postneonatal death became stronger. The latter finding is surprising, as single mothers appear to have become a less marginal group: the proportion of single mothers in the population has increased, and the proportion of teenaged pregnancies among single mothers has declined.

TABLE 2—The Effect of Maternal Education and Marital Status on Birthweight (In grams) of Offspring: Czech Republic, 1989–1991 and 1994–1996

	1989	1990	1991	1994	1995	1996
	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)	β (SE)
Mother's education						
Primary ^a	...	...	...	...	...	...
Vocational	143 (4)	153 (4)	159 (5)	172 (5)	183 (5)	192 (5)
Secondary	178 (5)	197 (5)	199 (5)	223 (5)	228 (6)	238 (6)
University	182 (6)	203 (6)	209 (7)	236 (8)	237 (8)	256 (8)
<i>P</i> for trend (1 <i>df</i>)	<.001	<.001	<.001	<.001	<.001	<.001
Mother's marital status						
Single ^a	...	...	...	...	...	...
Married	169 (6)	191 (6)	180 (6)	163 (5)	166 (5)	165 (5)
Divorced	28 (12)	34 (11)	59 (11)	51 (10)	67 (10)	47 (10)
Widowed	61 (28)	138 (29)	127 (28)	140 (30)	92 (29)	92 (32)
<i>P</i> for heterogeneity (3 <i>df</i>)	<.001	<.001	<.001	<.001	<.001	<.001

Note. This analysis was restricted to singleton live births. The regression coefficients were adjusted for maternal age, parity, and sex of the infant.

^aReference category

TABLE 3—Mortality In the Postneonatal Period (28–365 days), by Maternal Education and Marital Status: Czech Republic, 1989–1991 and 1994–1995

	1989–1991				1994–1995			
	No. of Deaths	No. of Deaths per 1000	OR (95% CI)		No. of Deaths	No. of Deaths per 1000	OR (95% CI)	
			Crude	Adjusted ^a			Crude	Adjusted ^a
Mother's education								
Primary	280	5.3	2.69 (2.06, 3.51)	1.47 (1.09, 1.96)	143	5.2	3.68 (2.39, 5.67)	1.91 (1.19, 3.05)
Vocational	392	2.6	1.33 (1.03, 1.73)	1.00 (0.76, 1.32)	226	2.6	1.86 (1.22, 2.83)	1.47 (0.95, 2.30)
Secondary	266	1.8	0.92 (0.70, 1.20)	0.79 (0.60, 1.04)	96	1.4	0.97 (0.62, 1.52)	0.89 (0.56, 1.41)
University ^b	67	2.0	1.0	1.0	24	1.4	1.0	1.0
<i>P</i> for trend (1 <i>df</i>)			<.001	<.001			<.001	<.001
Mother's marital status								
Single	100	4.2	1.71 (1.39, 2.11)	1.25 (1.01, 1.56)	101	4.6	2.21 (1.77, 2.75)	1.60 (1.26, 2.04)
Married ^b	854	2.5	1.0	1.0	353	2.1	1.0	1.0
Divorced	42	4.9	2.00 (1.47, 2.74)	1.34 (0.97, 1.86)	34	4.6	2.21 (1.56, 3.15)	1.43 (0.98, 2.07)
Widowed	9	9.1	3.74 (1.93, 7.23)	2.61 (1.33, 5.15)	1	1.7	0.79 (0.11, 5.62)	0.47 (0.06, 3.43)
<i>P</i> for heterogeneity. (3 <i>df</i>)			<.001	.007			<.001	<.001
Total	1005	2.6			489	2.5		

Note. OR = odds ratio; CI = confidence interval. This analysis was restricted to singleton live births.

^aAdjusted for birthweight, maternal age, parity, and sex of the infant.

^bReference category.

Increasing Inequity

In light of the previous efforts to achieve equity in Eastern Europe, it is surprising to find such substantial differences in fetal growth indices between population subgroups in the Czech Republic at the beginning of the study period.⁶ It is plausible that the further divergence in birthweight and infant survival between socioeconomic groups in the Czech Republic is related to the divergence in living standards. This possibility is consistent with the literature, which has shown that both birthweight^{11,12} and infant mortality, particularly in the postneonatal period,¹³ are sensitive to socioeconomic factors.

The changes in pregnancy outcomes coincided with socioeconomic changes. The average real income in the Czech Republic decreased by almost 20% between 1989 and 1993 and was still 10% lower in 1995 than in 1989; real wages followed a similar trend.⁹ Although unemployment remained relatively low (around 3% in 1995),¹⁴ the socioeconomic differentials in the society clearly increased, as documented by an increase in the Gini coefficient (a measure of the degree of inequality of the distribution of earnings; 0 if total equality, 100 if total inequality) from 18.5 in 1989 to 23.4 in 1994.⁹

The economic benefits of education have clearly become increasingly important in the

Czech Republic in recent years: fewer than 5% of university-educated persons, vs as many as 35% to 40% of those with a primary education, declare subjective poverty.¹⁵ Although the current income differences in the Czech Republic are still smaller than those in the West,¹⁶ their appearance at a time of declining average real income almost certainly increased the vulnerability of some in the society, including single mothers and the less educated. This situation, together with the decline in social benefits, may have produced substantial hardship with the potential to affect health.

Our data provide some indication of the magnitude of the health impacts of social and economic reforms in the Czech Republic.

Infant mortality has not increased, even among the most disadvantaged, and the fall in birthweight was about 60 g. However, the social shock related to the reforms in the Czech Republic was relatively low; most Central and Eastern European countries experienced substantially larger declines in living standards.⁹ It can be expected that in these countries the impact of the reforms on pregnancy outcome and other health indicators will be larger.

There is evidence of increased social variation in the prevalence of smoking among Czech women from 1985 through 1992.¹⁷ While the overall prevalence of smoking remained unchanged, there was a marked drop in the proportion of university-educated women who smoked (from 20% to 11%) and an increase in the number of women with a primary education who smoked (from 24% to 30%). Thus maternal smoking, a powerful determinant of birthweight, may underlie some of the increase in social variation in birth outcome.

Health Care

The study period covered a transition toward a market economy, accompanied by a series of fundamental changes in the health care system. The main changes were the introduction of free choice of a general practitioner; direct access to specialists and specialist departments; a fee-for-service reimbursement system, which encouraged health care providers to increase productivity; and emergence of a private health care sector.

Recent improvements in neonatology services have been associated with the observed decrease in perinatal mortality in the Czech Republic.¹⁸ Whether and how the recent organizational changes in health care translate into social variation in birth outcome is less obvious. It is conceivable, however, that in the new system, which assumes a much more active role for patients and introduces direct payments for services, those with higher education or better social positions will bene-

fit most. Changes in health care may thus contribute to the widening social gradient in pregnancy outcomes.

Conclusion

We conclude that despite general improvements in the indices of size at birth and infant survival in recent years, there is a trend toward increasing social variation in birth outcomes in the Czech Republic. We suggest that the increase in social variation in birthweight and postneonatal mortality is related to the changing social circumstances of the families and mothers. Given the considerable extent of social variation in birth outcomes in the Czech Republic at the beginning of the study period, further widening of the social differences in recent years is a cause for concern. Trends in social inequalities should be further monitored and their underlying causes should be sought and addressed by policymakers. □

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