

Chapter Three

A biomedical critique

We may have won the struggle against a large number of diseases, especially the infectious ones, but instead we are facing other health problems, especially degenerative diseases, malignant diseases and the so-called psychosomatic disorders, which are much more difficult to treat and at present impossible to prevent. Anybody who follows the development of medicine will know that progress continues in a large number of fields, but at the same time it is impossible to suppress the suspicion that the major health problems of the day cannot be solved within the conventional framework of ideas (Wulff, et al. 1990, p.10).

Introduction

Having highlighted in chapter two that nothing was inevitable or predetermined about the dominance of the biomedical model by the 1930s and 1940s, this chapter moves from its historical and cultural background to its contemporary critique. This provides critical insights to underscore that health and illness are interpreted and approached in different ways and as such highlights that health is indeed a contested field. This provides a framework from which to gauge the appropriateness and long-term viability of biomedicine and also to better understand what alternatives to the dominant biomedical model still exist.

The discussion focuses on Marxist, feminist and postmodern biomedical critiques, which is consistent with the line of historical and sociological enquiry established in the previous chapter. We then turn to examining how critical concerns have emerged, why they have escalated in recent years and, in turn, to account more fully for some alternative perspectives on health and illness. Finally, we discuss the sustainability of the biomedical model in its current form and explore prospective policy options.

Contesting the biomedical model

Chapter two discussed the salient features that characterise the modern medical tradition. These include an overwhelmingly science-based, cure-oriented, hospital-centred, and profession-dominated view of health and illness. These same features also form the basis of the key contemporary criticisms of the model. In short, by focusing on such specific and narrow criteria, the medical model has been criticised for neglecting

other causal influences that shape health outcomes, such as social, cultural, economic and environmental factors (Curtis and Taket, 1996, p.28).

Sociological perspectives on health and medicine suggest that medical ideas are socially constructed entities subject to various biases, value judgements and limitations (Freund and McGuire, 1991, p.6). This was highlighted earlier in the range of biomedical assumptions offered about the body and the manner in which health and illness is understood. Closely related to arguments of social bias and limitations is the notion that the experience of illness is not something completely random. Eckholm (cited in Freund and McGuire, 1991, p.2) points this up by referring to the cultural relativism of health perceptions:

Individuals who enjoy good health rightly think of themselves as fortunate: But luck has little to do with the broad patterns of disease and mortality that prevail in each society. The striking variations in health conditions among countries and cultural groups reflect differences in social and physical environments. And increasingly the forces that shape health patterns are set in motion by human activities and decisions. Indeed, in creating its way of life, each society creates its way of death.

Analyses of social power are thus intrinsic to understanding sociological perspectives of health and illness. Broadly, these perspectives criticise medical knowledge for “failing to account for the influence of the social context on health and on the experience of illness, and as serving to control those whom it is meant to help” (Petersen, 1994, p.20). Three key social power perspectives — structuralist, feminist and post-structuralist—are considered in turn.

Structuralist perspectives

Structuralist perspectives are based on the ideas of the economic-philosopher Karl Marx (1818-1883) (Petersen, 1994, p.22). He argued that many issues could be understood in terms of the fundamentally unequal relationship between labour and capital, and that the structural features of the social world reflected this. Following this type of analysis, health is viewed as something essentially maintained to meet the needs of the capitalist system (Gerhardt, 1995, p.73).

Two key Marxist perspectives on health have been identified: first, the living and working aspects of capitalist society that are related to health problems; and second, the particular way the state supports class interests through the health service delivery (Petersen, 1994, p.22). Marxists criticise medicine as a class instrument that focuses on curative, individualistic and technical solutions rather than social and political ones, such as reducing poverty and improving living and working conditions, which would necessitate a restructuring of capitalist economic and social arrangements (Petersen, 1994, p.22).

Capitalism, disease, and death

Among other things, Marxist writers argue that capitalism's reliance on a significant power differential between the owners of the means of production and the working classes significantly influences the realities of disease and death. This belief reflects the relationship between health, social class and inequality.

Equality refers to "a levelled standing with respect to a named utility", and can be considered a significant issue in health for several reasons (Reisman, 1993, p.7). First, health care, at least up to a certain standard, can be regarded as a basic human right and not as an economic good; second, there is a view that the alleviation of those in the worst-possible distress assumes primary importance; and third, health care can assume the moral dimensions of altruism, reciprocity and social duty (Reisman, 1993, pp.9-12).

Even though equality in health can be viewed as important, the concept is, however, applied in different ways. One approach, for example, is to focus on health status outcomes, by minimising disparities in rates of mortality. Another is to equalise health care inputs. Numerous issues are raised by both approaches. Commentators highlight the danger of notions of equality being associated with lowest common denominators, as Reisman (1993, p.17) argues:

Equality must not be confused with absolute increase or general improvement such as will always remain the more important concerns of a society committed to health and not consumed by jealousy. Equality must . . . be taken to mean the levelling up of the deprived to the standards of the best, not the levelling down of the best to the standards of the deprived.

In spite of the importance of the relationship between equality and health, profound inequalities in health status exist. For example, Sax (1990, p.22) points out that it has long been known that the risk of untimely death varies, and often significantly, between geographical localities, rural and urban settlements, occupational categories and social class groupings.

With the introduction of the welfare state in many European nations after World War II, it was thought that rising living standards would gradually reduce inequalities in health status. However, successive studies eventually concluded that in spite of significant improvements in living standards throughout the twentieth century, the relative inequalities in health status between social classes continued or widened (Armstrong, 1993, pp.1652-1653).

An early key study was the Black Report on *Inequalities in Health*, released in 1980 (Black et al. 1980). Commissioned by the British Government, it revealed that inequalities in health within the United Kingdom had increased steadily since the mid-1950s (Dobraszczyk, 1989, p.48). The study revealed that the risk of premature death was related to social class, and that health inequality was becoming worse. Class inequalities were found in birth, childhood, adolescence and throughout adult life, and the position of the poorer classes relative to the richer ones was generally deteriorating (Hart, 1985, pp.52, 54). A key feature noticed in the class differences was how broadly based they were. For example, the report established that at birth and during the first month of life, the risk of death in families of unskilled workers was double that of professional families. Furthermore, over the next eleven months of a child's life, the rate of disadvantage increased (Black, et al, 1980, pp.51-52). Wilkinson (1988, p.210) noted that all the main causes of death, except for breast cancer, highlighted the disadvantage of lower classes. However, beyond determining who may suffer from a given disease or illness, inequality was also found to profoundly influence an individual's chances of dying once they had contracted it.

Conversely, evidence exists to challenge the argument that a positive relationship exists between poverty and ill-health. Research shows little correlation between poverty and problems such as coronary heart disease, hypertension, rheumatoid arthritis and

osteoarthritis. It would seem that some disease states are related to income levels while others are not (Sax, 1990, p.24). Yet, as Sax (1990, p.24) notes:

[D]eath rates of the lowest income group are much greater than among the highest income group so that fewer of the poor survive to ages in which the diseases specified are most prevalent . . . Data on the use of hospital facilities indicate that the poor have more serious conditions than other persons, they are hospitalised more frequently and they have higher rates of multiple admissions.

The weight of evidence pointing to such broad-based and growing health inequalities within populations has increased the search for explanations. They include: inequality as an artefact; inequality as natural selection; and inequality as material deprivation (Hart, 1985, p.62). The most significant structuralist explanation relates to broader factors beyond the immediate control of the individual. Marxists argue that a large component of adult pathology and death must be considered a measure of the misery caused by social and economic organisation (Doyal, 1994, p.27). Dobraszczyk, for example, argues that the factors involved relate to the quality of working lives and to relative market position (1989, p.49). More explicitly though, it is suggested that “misery” results from the impact of measures impinging on working conditions that improve the profitability of capital, ranging from shiftwork, overtime, and exposure to dangerous chemicals, to stress and a damaged and polluted environment (Gerhardt, 1995, p.74).

In addition to patterns of disease and death, Marxists also argue that the mode of organisation and intervention of medicine are indicative of the structural imperatives of capitalism. Critics thus argue that a contradiction often exists between the pursuit of health and the pursuit of profit (Doyal, 1994, p.44). The inherent nature of this contradiction is said to result from the inability to clearly prioritise investment in elements of social capital due to their real or apparent unprofitability (McKinlay, 1984, p.4).

This contradiction is reflected in the way that health is defined and how it is managed. First, health is defined in functional terms, which means that health is typically equated with “fitness” in an instrumental sense to do what is normally expected of someone in a given social position. For example, if an individual does not show signs of being unhealthy—that is they are able to undertake their routine tasks such as work—they are

deemed healthy (Doyal, 1994, p.34). A broader Marxist definition of health incorporating physical, emotional and social dimensions, maintains that biomedicine's functional bias serves to limit people's expectations of what it is to be healthy and thereby keeps sickness under control (Doyal, 1994, p.35). Second, health is defined in highly individualistic terms, where the emphasis in the origin of illness or disease is always upon the individual, which, in turn, obscures important socio-cultural and environmental aspects of ill health (Doyal, 1994, p.35).

Functionalist and individualistic characteristics of health have meant that medicine is essentially curative. Marxist perspectives maintain that the curative emphasis has key social and economic significance. First, with curative or science-based medicine now providing the basis for the global health care industry, better health care is dependent upon constant technological innovation in the provision of biomedical solutions to health problems. Secondly, it protects powerful interests by denying or minimising preventive social and economic measures, which would necessarily interfere with the organisation of the productive process (Doyal, 1994, p.36).

Occasions still arise, however, when collective needs coincide with initiatives of capitalist institutions. But as Marxists like McKinlay point out, such occasions are rare and do not necessarily represent an abandonment of the principles of market capitalism. Instead, this commentator likens those occasions to "coincidental benefits", whereby the pursuit of social goals and the pursuit of maximum profitability coincide by accident (McKinlay, 1984, p.8).

Medical dominance and the state

Marxists also highlight that the state plays a critical role in the dominance of the medical model. This primarily occurs through the state's endorsement of biomedical knowledge and practice, through government policy and subsidies, which serves to divert focus away from the broader economic and social factors associated with disease and alternative perspectives on health. Both the medical establishment and the state are argued to benefit from this process. Doctors maintain their status and incomes insofar as they have significant control over state sanctioned health expenditure, while the state maintains its legitimacy as a carer in delivering medical services that the population regards as essential (Petersen, 1994, p.25). Yet, the state's role can be considered

somewhat controversial given claims that the successes and prowess of the medical model, relative to other models, are greatly exaggerated (Brown, 1980, p.219).

To highlight the significance of the state in facilitating the dominance of biomedicine, a focus of Marxist analysis is on the role of medicine in the health of populations. This was seen as important given the change from pre-industrial to industrialised states and the general improvements in health and declining mortality rates. The reasons for this declining mortality, debated for many years, centred around three different propositions: the impact of medical intervention; the establishment of public health administration and legislation; and improvements in nutrition and standards of living (Gray, 1993, p.76).

Research indicated that a general belief existed amongst the community that medical intervention was the primary reason for the decline in mortality (Dobraszczyk, 1989, p.8). McKeown and associates (1976) challenged this theory. They argued that the role of medicine in this process was relatively small. Using historical epidemiological evidence from the eighteenth century onwards, McKeown argued that the decline in mortality can be attributed to four key factors that owe much to the public health movement (as discussed in chapter two). First, a reorganisation of agriculture led to increased food crop yields, which improved general nutrition. Second, environmental sanitation also improved nutrition and reduced mortality. Third, these factors allowed living standards to increase. And last, key preventive and therapeutic interventions gradually introduced in the twentieth century, such as vaccines and antibiotics to combat infectious diseases, improved health and accelerated the already significant decline in mortality (Brown, 1980, pp.219-220).

The role of public health in the decline in mortality, and McKeown's analysis in particular, has received scrutiny. Szreter, for example, has argued that the most important factor in the decline was the public health movement working through local government rather than nutritional improvements through rising living standards (1995, p.191). Nonetheless, over time, the argument as to the importance of public health initiatives in contributing to declining mortality has been generally accepted in medical sociology. This is largely attributable to the fact that issues of nutrition, environment, and individual behaviour were beyond the power or focus of the medical profession

(Dobraszczyk, 1989, p.8). In addition, it is recognised that with the exception of diphtheria, the advances in medical science that enabled it to treat many feared diseases occurred after they had ceased to be major causes of death (Dobraszczyk, 1989, p.8).

Some academics argue that it would seem reasonable to assume that this situation has changed, and that medical knowledge and practice now have more effect on current mortality rates than improvements in living standards (Coleman and Dimsdale, 1988, p.10). Yet, despite the many achievements of modern biomedical science in saving lives through more and more intrusive procedures and an increasing arsenal of powerful drugs, the intense controversy remains. Evidence suggests that “[w]estern mortality in the twentieth century is dominated, as it was in the nineteenth, by diseases that cannot be cured — only they are different diseases” (Coleman and Dimsdale, 1988, p.10). For example, it was claimed that the increased prevalence of lung cancer and heart disease in developed nations was not a failure of medicine, and that their later decline owed little to specific medical intervention but more to social intervention such as anti-smoking campaigns (Coleman and Dimsdale, 1988, p.10). This suggests that better health still has more to do with improving social, environmental and economic living standards than more sophisticated medical care.

Medical treatment is not necessarily ineffective. Instead, the problem relates to a lack of evidence to conclusively isolate the contribution medicine has made to improvements in health. Moreover, this situation is made more problematic with contradictory evidence emerging about the relationship between medical care and mortality rates. For example, Hart (1985, pp.7-8) cited evidence suggesting that the most significant declines in infant and maternal mortality in the early twentieth century occurred when the British population had limited access to medical services because the majority of doctors had been drafted into the army.

Also of importance is that enthusiastic state promotion of the dominant health model has also generated claims concerning the “medicalisation of life”. The central argument is that through a process of making the labels of “healthy” and “unhealthy” applicable to more and more aspects of human existence, medicine has become a major institution of social control (Petersen, 1994, p.17). As noted by Porter (1997, p.718), the suggestion

is that “everyone has something wrong” that can be cured only through modern medicine.

Over time, this representation has meant that many everyday problems that people have traditionally dealt with through natural, social, community and personal activities have been “colonised” by medical professionals (Mishler, 1981b, pp.200-201). Seen in the context of social control, the tendency for many practitioners to promote the use of health care services beyond what may be strictly medically necessary, known as supplier-induced demand, has been labelled as “disease mongering” (Payer 1992). As noted by Moynihan (1998, p.137), “[f]or those who profit from sickness, promoting disease is good for business. The more patients wanting to be treated, the bigger the market for those who make and sell treatments”.

Two significant factors contribute to the medicalisation of life. First, the medical profession has been allowed by the state to “manufacture” increased demand for existing services. Generally, this extends medical treatment into areas of marginal or questionable need or benefit with potentially significant cost and risk (Stewart, 1995, p.83). The extension of existing treatments has been so successful in the United States that the near doubling of the ratio of doctors to population since 1960 has not led to a surplus of medical practitioners, neither in general nor specialty fields (Stewart, 1995, p.82). Any hint of a surplus has been masked where medical practitioners have engaged in the over-testing and over-treatment of many medical services as a means to increase or reach some target income under fee-for-service arrangements (Oxley and MacFarlan, 1994, p.14; Stewart, 1995, p.82). Some of the most popular medical items for over-prescribing include caesarean sections, treatment for high blood pressure, and various diagnostic tests, such as magnetic resonance imaging scans. Different funding methods also promote unnecessary medicalisation (Ross et al. 1999). For example, public and private health insurance is argued to promote an unwitting conspiracy between medical practitioners and consumers to generate and consume more health care than potentially necessary because a third-party (ie. an insurer) pays for it.¹

Second, the profession has, in conjunction with drug and medical equipment manufacturers, been able to “manufacture” demand for new services through re-defining

¹ This market distortion, created by the absence of price signals, is generally known as “moral hazard”.

conditions as illnesses and through creating new areas for testing and therapeutic intervention (Stewart, 1995, p.83). The expansion of definitions of health and ill-health in the field of human genetics today constitutes one of the most prominent examples of the medicalisation of life. Rapidly expanding knowledge in the field of biotechnology, facilitated by initiatives such as the Human Genome Project (HGP) has opened up new frontiers in genetic screening and gene therapy. Yet, at the same time, the rapid and seemingly inexorable expansion of medical genetics has caused consternation in many circles. A central issue is the suggestion that medical (genetic) factors are closely associated with conditions and behaviours that others identify as overwhelmingly social and environmental in origin. Supporting the latter argument, the World Health Organisation (WHO) argues that “[m]ost people the world over die not because they have “bad genes,” but for lack of sufficient and nutritious food, clean water, sanitation, and vaccines and other inexpensive medications” (cited in Hubbard and Wald, 1997, p.163). At a more local level, the capacity for genetic testing to play a positive role in the life of an individual is dependent upon due consideration of their social and economic background (Kitcher, 1996, p.78). This is important since many people lack the resources in terms of time and money or control over their individual circumstances to easily follow the recommendations that stem from genetic diagnoses. Within such a context, genetic information can simply become a means of magnifying inequities already present (Kitcher, 1996, pp.78-79).

Concerns about the expansion of the sphere of medical practice extend also to issues of gender and the body, especially the inclination of society to medicalise a significant number of health issues that overwhelmingly affect women. This has led to the development of uniquely feminist critical perspectives (Petersen, 1994, p.38). Of key concern are the profound consequences of medical knowledge and practice on the ways in which women experience health, illness and health care (Nettleton, 1996, p.33).

Feminist perspectives

Feminist perspectives on medicine view biomedical knowledge as dominated by gendered stereotypes that constitute an ideological weapon against women in patriarchal society (Petersen, 1994, p.26; Scambler, 1998, p.111). Feminist researchers argue that patriarchy, which has largely excluded women from power and necessitated that they

function as subordinates, is a critical source of control over women's lives and is generally disadvantageous to their health (Doyal, 1995; Scambler, 1998, p.102). For example, Doyal (1995) explores the inequalities of health status amongst the broad category of women and argues that parallels exist the world over. Although women and female children in developed countries are respectively less likely to die in childbirth and experience infanticide, they nonetheless experience gender-related health hazards arising from the influence of patriarchy. This is because they are overly subjected to domestic violence, rape and sexual harassment, have been subject to control of their reproductive capacity in many ways (Rowland 1992; Scambler, 1998, p.117). Furthermore, their position of sub-domination and inequality impacts on psychological health, and in turn can facilitate stress and ill-health.

Sherwin (cited in Purdy, 1996, p.164) points out that women have been "especially harmed" by the power of the medical profession to define illness. At the broad level, it has generated "the bizarre conclusion that we are never quite well: pregnant or not pregnant, menstruating or not, there is always something wrong". More specifically, the recasting of pregnancy and childbirth from life events to a double medical emergency can frequently result in the undermining of self-esteem and depression (Oakley, 1986; Gerhardt, 1995, p.72).

At the centre of this patriarchal struggle are the values of medical science. In keeping with Cartesian dualism, scientific discourse divides thought into contradictory and dichotomous spheres of male and female (Rowland, 1992, p.203). Accordingly, science has become viewed as epitomising the "manly" characteristics of reason and objectivity, while the female mind has become viewed as "untamed, emotional and subjective", and thereby incompatible with science (Rowland, 1992, p.202). In keeping with these assumptions, medical practice tends to consign to women the role of passive recipients of treatment and even as scapegoats for society's ills (Foster 1989). For example, when women are miserable or attempt to rebel against social conditions, they have been labelled as mentally ill (Scambler, 1998, p.111).

The construction of biomedical knowledge and practice as superior to other ways of knowing devalues and invalidates much of the daily and individual experiences of women and men (Rowland, 1992, p.202), as well as other discourses. In response,

much feminist medical sociology has sought to recapture these daily insights which have been effectively hidden and are still acknowledged to be difficult to record (Jones, 1994, p.73). For example, feminists have described how medical accounts of female patients often focus on their biological weakness and dependence, and how doctors have tended to treat symptoms of illness in female patients with less seriousness than those voiced by male patients (Jones, 1994, p.72). The use of reproductive technologies, eating disorders, and the position of women in the health care workforce are key subjects in feminist critiques.

In recent decades, reproductive technologies have sparked much feminist debate. In keeping with the anti-positivist themes characteristic of such critiques, feminists flatly resist these technologies. They see them as representative of social values like commodification and control, mechanisms by which male-dominated scientific culture can commercialise and gain dominion over life itself. Such analyses draw from the exclusion of men from pregnancy and birth, and the construction of institutions “to invade that realm of women’s experience” (Rowland, 1992, p.12). Feminists argue that through such processes:

[W]omen are further objectified and fragmented, dismembered into ovaries and eggs for exchange and wombs for rent. The commodity ‘woman’ or a part of woman can be used to produce the ‘commodity’ child. . . . [B]ecause our society does not accept the imperfect, women will be placed under more and more pressure to use all technological means offered to secure perfection. Less and less assistance will go to those who make the ‘mistake’ of having an imperfect child. So in the age of the perfect product, difference (named ‘defect’ or ‘abnormality’) will be less and less acceptable (Rowland, 1992, p.4).

There is evidence to suggest that such conditioning is widespread. For example, in the field of obstetrics, electronic foetal monitoring was originally introduced for those women judged to be at high risk of obstetrical complications. Yet, it has become standard practice in various countries. Similar circumstances relate to the use of ultrasound, amniocentesis, caesarean section and genetic testing and counselling (Petersen, 1994, p.28).

While the conflicting demands placed on women about the ideal bodily form have been subject to extensive analysis, a significant part of the research has focused on women’s preoccupation with weight (Purdy, 1996, p.172). Women, especially in western

societies, are conditioned to live up to a portrayed (and commodified) cultural ideal of “unnatural thinness” that can only be attained and maintained by vigilant self-control. That goal, in which medicine plays a role insofar as it defines the normal female form, is noted to be “so extreme as to be unhealthy” (Petersen, 1994, p.27; Purdy, 1996, p.172). Eating disorders are one of the commonest coping mechanisms. However, when medical practitioners focus on such problems, analysts note that they overwhelmingly focus on the minority of people who exhibit excessive dietary or exercise habits to the exclusion of the social context within which the problems arise (Petersen, 1994, p.26). As a consequence, medical treatments have only limited success.

Feminist analysis also focuses on the role of women as health workers. For the most part, this work occurs within the home setting and is unpaid, which has meant that it has tended to be overlooked by medical sociology (Jones, 1994, p.72). Instead, attention has focused on the formal health sector and paid professional workers who constitute “the ‘visible’ part of the iceberg” (Jones, 1994, p.72). However, considerable inequality also exists within the formal sector’s division of labour. For example, within Australia, some 30 per cent of general practitioners and 25 per cent of specialists are women. Yet in nursing, over 90 per cent of all nurses are women (Petersen, 1994, p.31).

Although feminist critiques of biomedical knowledge and practice extend to a much wider realm, as feminist scholarship has deepened, theorists began to focus on different aspects of women’s situations. This was fostered by a sense that feminist perspectives, such as patriarchy, were too deterministic in their views of social life (Petersen, 1994, p.38). Notably, the resurgence of the ideology of individualism made it possible to develop new theoretical (including feminist) approaches based on individual empowerment (Scambler, 1998, pp.102-103). This leads us to the last of the critical perspectives, post-structuralism, which focuses on the multifaceted nature of social power and the capacities for resistance.

Post-structuralist perspectives

Post-structuralist and postmodern perspectives refer to a broad area of study that describes and defines trends in contemporary industrialised society towards greater diversity, fragmentation, conflict and pluralism (Jones, 1994, p.74). As pointed out by

Bury (1998, p.2), postmodernity can be understood as “an idea, a cultural experience, a social condition or perhaps a combination of all three”.

Two particular forms of postmodernism relate to the critiques of the biomedical model. The first is a reaction to science, technology and reason, which criticises Enlightenment rationality and focuses on the values that modernity denies (see, for example, Haraway 1996). Here, postmodernism “refuses to see science as some kind of supreme model or meta-narrative”, but as subject to distinct biases (McNeill, 1998, p.103) (as also discussed in chapter two). The second refers to a critique of Cartesian dualism, which philosophically distinguished the human mind from the body and conceptualised human beings as existing independent of their broader physical environment. Together, both forms of postmodernism call for a rethinking of health, illness and medicine, which reflect and contribute to the shaping of modern culture and society (Bury, 1998, p.5).

Particular emphasis in postmodernism is placed upon the different ways in which power is realised and experienced through processes of objectification, rationalisation and subjectification.

Objectification

Michel Foucault (1926-84), a key postmodern theorist in this area, was specifically interested in the relationship between knowledge and power (Bury, 1998, p.5). Foucault argued that medicine, and other key areas of knowledge, were formulated in the nineteenth century to facilitate the surveillance and control of the populations of the growing industrial centres (Petersen, 1994, p.32). Foucault explored these themes through studies of psychiatry and sexuality. In *The Birth of the Clinic* (1975), he argued that a “clinical gaze” fabricates our conceptions of the human body, allowing for illness to be transformed into an object of medical discourse and for the patient to be subsequently brought under the control of the powerful (medical) expert. As Bury (1998, p.7) pointed out, “[o]nly the doctor can know the truth about illness through the language of disease, and the patient becomes a passive agent”.

In interpreting Foucault, Jones argues that this particular biomedical way of “seeing and knowing” the body supplanted earlier and more holistic ways of seeing and knowing. In this evolutionary context, and while powerful and very persuasive, the biomedical

model remains only one way of conceptualising bodies. In short, postmodern analyses assert that biomedicine might in time be replaced by some new “truth” that conforms to an alternate model of health (Jones, 1994, p.78). As Foucault pointed out:

For us the human body defines, by natural right, the space of origin and the distribution of disease: a space whose lines, volumes, surfaces, and routes are laid down, in accordance with a now familiar geometry, by the anatomical atlas. But this order of the solid visible body is only one way — in all likelihood neither the first nor the most fundamental — in which one spatialises disease. There have been, and will be, other distributions of illness (cited in Jones, 1994, p.78).

Rationalisation

Rationalisation perspectives in postmodernism focused on the shift from traditional modes of thought in everyday decision-making to more calculating attitudes (Bury, 1998, p.9). This shift related to the increasing tendency to separate knowledge from everyday life, which gave rise to a new ideology that effectively eroded the scope of everyday life from which an individual can confidently make decisions. Featherstone (cited in Bury, 1998, p.9) explained how such processes create a powerful dynamic which, in turn, advocated the “transformation, domestication, civilization, repair and healing of what are the shortcomings of everyday life”.

The monopoly by the medical profession and the ongoing medicalisation of life are key elements in the rationalisation process. Armstrong (1995) has observed that the medical profession has moved significantly beyond the traditional domain of the hospital or clinic so that all areas of normal life (including physical and mental experience and behaviour) have fallen under the calculating gaze of medicine. Through this process, increasing emphasis was placed upon “active consumerism” and “lifestyle” and the capacity of consumers to make “rational” choices. Thus a new form of homogenisation is said to have occurred, whereby individual behaviours that are not positively associated with health become alienated (Bury, 1998, p.11).

Subjectification

Related to rationalisation, subjectification refers to a process whereby the more an individual becomes active in calculating lifestyle risk, the more they come under the force of a new form of power and domination. The core suggestion of subjectification is that the reflexive capacity of consumers to make rational lifestyle choices to promote “a

surer grasp of the world around us” can actually be counterproductive to helping achieve this goal. For example, the assimilation of genetic information to calculate health risk, such as through screening techniques, has significant potential to dominate conceptions of health in spite of the significant uncertainty that it may also create (Bury, 1998, pp.12-13).

However, beyond the notion that “power has become ‘lighter’ in form, shifting from ‘sovereign’ to ‘disciplinary’, and then to ‘pastoral’ forms of surveillance”—a shift whereby power is exercised more subtly—postmodernism also offers scope to empower consumers in health care (Bury, 1998, p.23; Fox, 1998, p.31). Fox (1995, p.107) explained this potential through his concept of a dualistic nature of care. In the first instance, biomedical care can be understood as a technology of surveillance that due to the specialisation of medical care constitutes a vigil. However, biomedical care can also be the basis of an alternative style of care based on love and generosity. As noted by Fox, the *gift* of care seeks to enable the patient and also resists the discourse of the *vigil* (Fox, 1995, p.107). While conceding that this idea was “a hard one”, Fox argued that anyone can engage in this process and that it can begin immediately. He pointed out that “it is possible to engage with others in ways which will open up possibilities, not close down the way people think or behave” (Fox, 1998, p.31).

Yet, although postmodern perspectives place significant emphasis on openness, diversity and freedom, and emphasise that the biomedical model is just one meta-narrative amongst other narratives, they have also been intensely criticised. An enduring critique is the inclination towards relativism, or the tendency to see all forms of knowledge as narratives where there are insufficient grounds to claim the truth of any one knowledge (Petersen, 1994, p.35). For example, while it is generally accepted that Foucauldian analysis has contributed to feminist critiques of biomedicine, analysts are wary that “if we go too far down the constructivist road, we might lose sight of the underlying biological reality or essence” (Scambler, 1998, p.114). Despite its intellectual appeal, postmodern perspectives on the body, health and illness have not expunged the medical treatment of disease and illness (Bury, 1998, p.25). In large part, this is because of the dominance of biomedical discourse, which is aided by new developments in knowledge and therapeutic practice. Indeed, in many ways, it is the best of times for the biomedical model.

The best of times

Structural, feminist, post-structural and postmodern perspectives on health have highlighted a number of serious and persistent criticisms of biomedicine. In summary, over time, the biomedical model has become synonymous with a highly specific or exclusive interpretation of health, processes of surveillance and social control, and more broadly, economic interests associated with capital accumulation. As elucidated by Petersen, “the power of medicine derives from its knowledge that defines human beings according to their biology and as having a particular kind of rationality and relationship to society” (1994, p.14).

Despite the significance of such arguments and the emergence of new complexities and consumer trends towards other knowledge (discussed in more detail below), the biomedical model remains overwhelmingly dominant. Indeed, in the public imagination, never before have medical achievements been seen as so great (Porter, 1996, p.6). Biomedicine’s substantive and methodological legacy remains intact.

Medicine is accorded considerable importance in the epidemiological transition evidenced over the course of the twentieth century, where there was a shift in the causes of death and disability from infectious to non-communicable diseases (WHO, 1999, p.13). Immunisation, for example, is heralded as “the greatest public health success story in history” (WHO, 1999, p.23). However, this should be contrasted with the historical record highlighted earlier, and to critiques of immunisation, which point to the significance of environmental factors in reducing the incidence of infectious disease and the public health risks immunisation poses (The Harvard Working Group on New and Resurgent Diseases, cited in Ho, 1998, p.54; Thinktwice Global Vaccine Institute 2000). Table 1 illustrates how immunisation-based medical intervention is seen as the single factor in the epidemiological shift.

Popular acceptance of the benefits of immunisation can do little but further empower medicine’s legacy, which is further conditioned by the ability of medical practitioners to intervene with a growing array of invasive procedures. Some significant procedures to emerge and their estimated effects on life expectancy are highlighted in Table 2.

Table 1: Impact of immunisation on vaccine preventable diseases in the USA

Disease	Cases reported in USA (peak year)	in USA (1993)	decrease
Diphtheria	206939 (1921)	0	100%
Measles	894134 (1941)	281	99.9%
Mumps	152209 (1968)	1640	98.9%
Pertussis	265269 (1934)	6335	97.6%
Paralytic poliomyelitis	21269 (1952)	4 (vaccine related)	100%
Rubella	57686 (1969)	195	99.6%
Congenital rubella syndrome	20000 (1964-65)	7	99.9%
Tetanus	1560 (1923)	43	97.2%

Source: Fett, 2000, p.10.

Table 2: Average gain in life expectancy in months from selected health technologies

		expectancy (months) Males	expectancy (months) Females
Estrogen replacement therapy after hysterectomy	Women aged 50y	-	13
10 years of biennial mammography	Women aged 50y	-	0.8
Pap smear every 3 y for 55y	Women aged 20y	-	3.1
Annual fecal occult blood test every 5 y for 25 y plus barium enema or colposcopy	50 y olds	2.5	2.2
Reducing diastolic blood pressure from >105 mm Hg to 88 mm Hg	35 y olds	64	68
Reducing cholesterol from >7.8 mmol/L to 5.2 mmol/L	35 y olds	50	76
Hormone replacement therapy with estrogen and progestin in 50 y old woman with history of coronary heart disease		-	11 to 26
Myocardial revascularisation by coronary artery bypass or angioplasty in men with disease of:	One vessel	1-7	-
	Two vessels	0-8	-
	Three vessels	4-14	-
Implantable cardioverter-defibrillator in survivors of cardiac arrest with recurrent ventricular arrhythmias that do not respond to conventional therapy		36-46	36-46
Chemotherapy in patients with extensive small-cell lung cancer		6.6-8.2	6.6-8.2
Prophylaxis against Pneumocystis carinii pneumonia and toxoplasmosis in patients with advanced HIV disease		5.3	5.3
Appendectomy in patients with suspected acute appendicitis	Probable	9-31	9-31
	Possible	2-5	2-5

Source: Fett, 2000, p.12.

As previously discussed, however, the dominance of biomedicine owes much also to broader social and cultural factors, significantly, its organisation through the medical-industrial complex. Through this mode of organisation, Porter (1997, p.668) notes that

modern medicine has become synonymous with complex interrelated infrastructures, where components include universities and professional organisations, multinational pharmaceutical companies and insurance organisations, hospitals doubling as medical schools, research sites and lobbies, government departments, international agencies and corporate finance.

As highlighted by structuralist critiques, this model of political and economic organisation has enabled biomedicine to become inseparable from key institutions within society. The patronage afforded biomedicine thus distinguishes it from other health models. While biomedical dominance is indicative of the general medicalisation process, it also reflects the specific way the medical model is propagated, reproduced, and endorsed over alternative visions of health through powerful social institutions, including the mass media.

Necessary medical illusions — the role of the mass media

The mass media are a key source of community information about medicine. As noted by Moynihan (1998, p.195):

Most people, doctors and scientists included, learn about new medical treatments first through the media. What the community believes about health, disease and how to deal with it is profoundly influenced by the medical reporting in newspapers and on radio and television.

Powerful social and economic forces significantly influence the process of medical reporting. This is consistent with a view in which perceptions are shaped in the interests of domestic privilege and thereby tied to the free market (Chomsky 1991). Such forces can be extremely powerful. While it is traditional to associate the marketplace with freedom of expression, “the market can be almost as potent an instrument of control as the iron fist of the state” (Ginsberg, cited in Chomsky, 1991, p.7).

This process, referred to as the “manufacture of consent”, has relevance in understanding the dominance of the biomedical model (Herman and Chomsky 1988). Given that the major mass media sell audiences to advertisers, Noam Chomsky (1991, p.8) argued that “[i]t would hardly come as a surprise if the picture of the world they

present were to reflect the perspectives and interests of the sellers, the buyers, and the product”.

Within this political and economic context, media reporting can be subject to bias (see Nelkin 1987; Dunwoody 1993). Political and market realities mould the mass media to more readily promote and endorse dominant or establishment models, including the particular brand of health readily associated with the biomedical model. As Nelkin (cited in Moynihan, 1998, p.207) pointed out:

Writing for a public that is eager for optimistic news about medicine and personal health, the press is seldom inclined to challenge the positive reports that readers so much want to hear. Many journalists are, in effect, retailing science and medicine more than investigating them, identifying with their sources more than challenging them.

Analysis of newspaper reporting for new areas of health care such as biotechnology attests to the enthusiasm of the mass media in promoting biomedicine. White (1998) showed that the profile of biotechnology built up by an Australian national newspaper over the course of a year was overwhelmingly positive. Of 118 stories published over the period, 67 per cent were positive (with 25 per cent depicting breakthroughs and discoveries). Only 17 per cent were portrayed neutral (White, 1998, p.26). Moreover, although biotechnology has broad application across many sectors including food and energy, health care, agriculture and forestry, the reporting concentrated heavily on its health applications. Only five per cent of articles, for example, focused on the safety issues posed by genetic manipulation on the broader environment, which is a central issue in the biotechnology debate (White, 1998, pp.26-27).

Resistance to dominant representations of health though also exists within the mass media. Nelkin (cited in Moynihan, 1998, p.207), however, noted that at the broad level journalists and the medical community need to develop a different style of communication:

To understand modern scientific medicine, readers need to know its context: the political and economic bases of decisions, the social and ethical implications of research, and the limits as well as the power of science and technology as applied to problems of health.

Although the power of the mass media to endorse biomedicine is extremely pervasive, the scope of the biomedical model and associated national health systems to deal with ongoing and ever expanding health needs has fuelled a sense of perpetual crisis over recent decades (see Navarro 1986; Moynihan 1998; Richardson 1998). This sense of crisis has been reflected in two key areas: (1) growing consumer frustration throughout the developed world with the capacity of conventional health care systems to deliver quality health at reasonable cost and within acceptable timeframes; and (2) the zeal and frequency with which governments have introduced significant reform agendas since the late 1980s. This sense of crisis is reflected in falling consumer confidence with health care systems across Australia, Canada and the US, as highlighted in Table 3.² These political and economic forces highlight the paradoxical situation that while it can be considered the best of times for the biomedical model, it can also be considered the worst of times. As Porter (1996, p.6) points out, “rarely has medicine drawn such intense doubts and disapproval as today”.

Table 3: Trends in consumer satisfaction with health systems

Country	Rebuild completely (%)	completely (%)	needed (%)	needed (%)
	1988	1998	1988	1998
Australia	17	30	34	18
Canada	5	23	56	20
UK	17	14	27	25
USA	29	33	10	17

Source: Commonwealth Fund International Health Policy Survey 1998.

(And) the worst of times

The dominance of the biomedical model is increasingly being contested from both “within and without”. At the forefront of public debate are concerns relating to escalating health costs and ever-growing health expenditures and, perhaps more disconcertingly, the relative and increasing ineffectiveness of health care interventions (Navarro 1986; Moynihan 1998). These concerns cover a spectrum of factors associated

² This sense of crisis also extends to the medical profession, which across developed nations strongly criticises the efforts made by governments to manage health care, and especially health care expenditures. Beyond the realm of constructive political engagement, arguably it is likely though that the medical profession uses the media as a tool of propaganda to place additional pressure on governments.

with the dominance of the model and raise serious questions as to the viability of the medical model in its current form, as emphasised by postmodern critiques.

Escalating health expenditures

Health care costs have been rapidly expanding for many years. Within the OECD, health-care spending by governments has more than doubled as a share of GDP (gross domestic product) in the years from 1960 to 1998 (OECD 1998; OECD 2000). These figures are shown in Table 4.

Table 4: Total expenditure on health in GDP, 1960-1998 (per cent of GDP)

	1960	1970	1975	1980	1985	1990	1998
United States	5.3	7.4	8.4	9.2	10.5	12.4	13.6
Japan	3.0	4.6	5.6	6.6	6.5	6.1	7.6
Germany	4.8	5.9	8.1	8.4	8.7	8.7	10.6
France	4.2	5.8	7.0	7.6	8.5	8.8	9.6
Italy	3.6	5.2	6.1	6.9	7.0	8.1	8.4
United Kingdom	3.9	4.5	5.5	5.8	6.0	6.0	6.7
Canada	5.5	7.1	7.2	7.4	8.5	9.2	9.5
Australia	4.9	5.7	7.5	7.3	7.7	7.9	8.5

Source: OECD 1998; OECD 2000.

A number of drivers of growth are found in health expenditure. They include increasing consumer expectations for more and better health care, population growth and ageing, and an increased capacity of governments and individuals alike to allocate funds to health care as incomes rise (Ross et al. 1999, pp.17-18). On the supply-side, key drivers include advances in technology (including human genetics) and increased supply of medical practitioners (Ross et al. 1999, pp.19-20). Although the cost of health care *per se* has increased, the experience of wealthy industrialised nations demonstrates that the capacity of consumers to consume increasing amounts of health care in line with rising expectations (known as utilisation growth), has proven the determining factor in rising expenditures (Stewart 1995; Ross et al. 1999).

The self-reinforcing as opposed to self-limiting nature of drivers of health expenditure has created significant pressure on the policy process. For years, health economists have warned that the political demands for more and more health care to meet growing health needs could eventually destroy the universally-based public systems of health care in the United Kingdom, much of Western Europe, Canada, New Zealand, and Australia (Aaron 1994; Wyke 1997). To some commentators, this process appears well under

way (Wyke, 1997, p.171). The biomedical model, expressed and maintained through modern systems of health care delivery, can thus be seen also as a victim of its own political and economic success.

Perhaps the defining reason why many health care systems are perceived as “falling apart” is because increasing costs have not been met by a commensurate increase in the political willingness by states to fund them. Health care resources are in the end perceived as limited. This is not to construe growing expenditure in all areas of health care as inappropriate. In historical context, health care is provided to more people and covering a much wider range of health needs than in the 1960s. Clearly, some positive benefits are evident. But can growth in health expenditure continue?

There is considerable evidence to suggest that, in aggregate terms, continually expanding health care expenditures are unsustainable in the long term. This situation is highlighted by the United States, which, as shown in Table 5, spends far more on health care than any other nation. In 1992, the US spent approximately 14 per cent of GNP on health care (OECD 2000). But, even with the highest health care expenditure, health care was still too expensive for the 38 million Americans (or 17 per cent of the population) who did not have health insurance, and for another 50 million (or 22 per cent) who had major gaps in their benefit schemes (Navarro, 1993, p.15). This highly inequitable situation could easily worsen given that analysts predict that health care expenditures in the US could reach 26 per cent of GNP by 2030 — and that at this rate of spending *the whole economy* would have to be devoted to health care by 2050 (Graig, 1993, p.16). This is clearly unsustainable.

The capacity of health care to absorb more and more costs has in recent decades led successive governments worldwide, most notably through the Organisation for Economic Cooperation and Development (OECD), to push a vigorous reform agenda around managing or containing costs (see OECD, 1992; OECD 1994a). This has led to a focus on improving the technical efficiency of health care, by exploring the adequacy of resource allocation within a given program or episode of medical treatment (Leeder, 1999, p.xv).

A significant amount of this cost focus has been oriented at hospitals, which across industrialised countries constitute the largest segment of health care expenditures. The

introduction of casemix or output based funding, whereby a proportion of hospital funds are paid on the basis of hospital activity using Diagnosis Related Groups (DRGs) has become one of the most significant reforms to the hospital sector (Swerissen and Duckett, 1998, p.22).³

In countries such as Australia and the US, the introduction of casemix funding has improved efficiency and accountability for health expenditure (Swerissen and Duckett 1998, p.41). Nonetheless, the political costs of such reforms have been very high. In the public mind, health care reform has generally become associated with rationing and a sense of decline in the quality of even basic medical care (Wyke, 1997, p.189). However, even if rationing was not needed to avert a cost crisis, this begs the questions: Does more medical care lead to better health for those able to receive it? And more broadly, is more medical care, along the lines of the biomedical model, the best option in improving health outcomes?

Diminishing effectiveness of more health care

Despite the political appeal of spending more on health care, rudimentary analysis demonstrates that there is not a clear relationship between increased health expenditure and improved health outcomes. Table 5 shows the relative health expenditure for five OECD nations and the figures for infant mortality and life expectancy. While the US has the highest health expenditure, health outcomes measured in terms of infant mortality and life expectancy do not compare as favourably as those of the United Kingdom, Canada, Australia and Sweden, where per capita health expenditures are significantly lower. Indeed, health care expenditure per capita in the United Kingdom is approximately a third of that in the US, yet the UK experiences lower infant mortality and greater male life expectancy (Ross et al. 1999, p.14).

³ Diagnostic Related Groups (DRGs) are a classification system used for acute admitted patient episodes. This classification provides a means of summarising and relating the number and type of acute admitted patients treated in a hospital and relating this information to the resources required by the hospital (AIHW, 2000, p.274).

Table 5: Health expenditure and health outcomes, 1997

Country	Health Expenditure		GDP per capita	Mortality #		
	\$PPP (\$US) & Rank	%GDP Rank		Per 1000 & Rank	Female & Rank	Male & Rank
USA	4090 5	13.6 5	30179 1	7.8* 5	79.4* 4	72.7* 5
UK	1347 1	6.7 1	20247 4	6.1* 4	79.3* 5	74.4* 4
Sweden	1728 2	8.6 3	20034 5	4.0* 1	81.6* 1	76.7* 1
Canada	2095 4	9.0 4	23376 2	6.0* 3	81.5* 2	75.4* 2
Australia	1805 3	8.4 2	21392 3	5.8* 2	81.1* 3	75.2* 3

Source: Ross et al. 1999, p.14.

*1996 data

PPP (purchasing power parity)

Expressed per 1000 live births

There are, however, circumstances in which increased health care expenditure would significantly improve health outcomes. Amongst poor and disadvantaged social groups, Australia's Aboriginal and Torres Strait Islander population and New Zealand's Maori population are prominent examples where increased funding could be used to improve access to health services. Nonetheless, the lack of clear evidence between health expenditure and health outcomes raises issues about the allocative efficiency of health expenditure, and in particular, the possibility of allocating resources to other areas capable of yielding better health benefits (Leeder, 1999, p.xii).

That sense of importance attached to prioritising and allocating health expenditure to areas other than medical, and especially hospital care, has grown in recent decades. A key element in this push is mounting evidence indicating that the burden of illness, disability, distress and premature death, is less and less sensitive to further extensions in highly-interventionistic and technologically-focused medical care (Evans and Stoddart, 1994, p.39). The evidence suggests that while our health care system is almost totally oriented around biomedical conceptions, we are reaching the limits of what biomedicine can deliver for improved health (Evans and Stoddart, 1994, p.39).

The perceived shortage of hospital nurses is a case in point. Evans and Stoddart (1994, p.39) argue that nursing shortages have been a rising concern in Canada, and many other

industrialised countries. Simultaneously, these authors also note that an informed consensus exists as to the higher rates of utilisation of hospital beds than deemed appropriate. Over time, various initiatives have sought to reduce such use. Taken together though, this suggests “there is a ‘shortage’ of nurses to provide ‘unnecessary’ care” (Evans and Stoddart, 1994, p.39).

Beyond cases where more medical care is necessary, evidence suggests that the biomedical model of health is in a state of diminishing returns — whereby less and less is achieved through more and more health care. With ageing populations, developed societies are increasingly confronted by a reality in which cures are becoming less commonplace. And in global terms, it is argued that many cancers; viral illnesses and chronic conditions cannot be cured (Saltman, 1998, p.222). As observers note, “[w]hilst everyone talks and searches for ‘the cure to end all cures’, the prospects are not good. The number of diseases without definitive cures is increasing daily” (Saltman, 1998, p.222).

The diminishing returns associated with biomedicine are heightened by the evolution of dangerous new microorganisms resistant to treatment through the inappropriate and indiscriminate use of antibiotics in intensive farming and medical practice (Moynihan, 1998, p.120; Ho, 1998, p.147). Antibiotic resistance began to develop quickly after the introduction of antibiotics in the 1940s. For example, while almost 100 per cent of all cases of *Staphylococcus* responded to antibiotic treatment in 1952, by the early 1980s, this figure had decreased to less than ten per cent (Ho, 1998, p.148). A medical crisis has ensued. While the world has been confronted by the emergence of many “new” diseases such as Acquired Immune Deficiency Syndrome (AIDS) and Ebola in recent decades, “old” infectious diseases, including tuberculosis, cholera, malaria, and diphtheria are making a worldwide comeback (Ho, 1998, p.12). Increasingly widespread, the rate of growth of resistance is eroding the efficacy of medical treatment. Becoming increasingly commonplace in hospitals, new cases of pathogenic resistance arise almost as soon as new drugs are introduced and some outbreaks are resulting in deaths (Ho, 1998, p.148). Moreover, a compounding element is that the increasingly difficult research and development environment of antibiotic resistance (as discussed further in chapter five) has led to fewer “new” drugs (von Grebmer 1985).

Yet, in spite of the pessimism arising from the diminishing returns associated with conventional or hospital-based medical care, the burden of illness may also be very sensitive to interventions and structural changes outside the health care system (Evans and Stoddart, 1994, p.39). A unique example of this is the positive health effects found through development of a sense of control over one's destiny (Syme 1996). A well-known case study explored the association between adverse psychosocial characteristics at work and the risk of coronary heart disease amongst British civil servants (Bosma, et al. 1997). Men and women with low job control, either self reported or independently assessed, recorded higher health risk (Bosma, et al. 1997). Such research forms part of an overarching body of knowledge suggesting that better health outcomes are achieved by accounting for social, economic and environmental determinants that reflect the multi-dimensional or holistic nature of health. Moreover, this research reinforces the argument that the more equally wealth is distributed in a given society the better the health of the society. These ideas are consistent with the arguments advanced by structuralist traditions, which argue that matters of freedom, power, education and money inextricably related to living standards are critical in determining, and thus reducing, health inequalities.

These findings are highly relevant to contemporary health policy. In particular, they highlight the importance of factors that extend far beyond health care in the promotion and management of health status. The existence of other determining factors affecting health has important consequences. Most notably, it presents the distinct possibility that positive effects of health care may be outweighed by negative effects caused by its excessive competition for resources with other health-enhancing activities (Evans and Stoddart, 1994, p.55). For example, increased health expenditure on programs for the aged may only be beneficial if they are associated with adequate and nutritious food and appropriate shelter, and maintenance of some social contact with the outside world. This presents the very real, but simultaneously dialectical position whereby the expansion of the health care system may, even in marginal terms, have negative effects on health (Evans and Stoddart, 1994, p.56).

While the suggestion that health care can be generally disadvantageous to health is controversial, it is not new. Ivan Illich (1990) has described the direct negative effects of health care on health as a process of "iatrogenesis", or doctor-induced illness. He

argued that many aspects of modern medicine were counter-productive, whereby “pharmaceutical products made you ill, hospitals were hot-beds of infection, surgery was often bungled, tests were lacking or misleading, or they created maladies of their own” (cited in Porter, 1997, p.687).

One of the most tragic and public examples of the latter was the thalidomide disaster of the 1950s and 1960s. The drug, rushed onto the market without adequate testing as a sedative for pregnant women against morning sickness, was later found to correlate with severe birth deformities. Approximately 8000 babies were born with truncated limbs before the product was eventually withdrawn from the market in 1961 (Ho, 1998, p.41). However, concerns about the perceived safety of medical treatments and procedures have not gone away. In the US in 1999, the Institute of Medicine published *To Err is Human*. It estimated that between 44,000 and 98,000 Americans were dying each year as a result of the application of health care. As a measurement of death, either estimate is higher than the number of Americans dying annually from highway accidents, breast cancer or AIDS (Institute of Medicine 1999). The Institute of Medicine analysis followed on from many smaller studies, including one by the Boston University Medical Centre in the early 1990s, which found that up to 36 per cent of patients developed one or more iatrogenic complications, many of them drug-induced (Watts, 1996, p.342).

The US, however, is by no means alone in this situation. Closer to home, the landmark *Quality in Australian Health Care Study* in 1995 established that in 1992, an adverse event occurred in 16 per cent of over 14,000 admissions to 28 public and private hospitals in New South Wales and South Australia (Wilson, et al. 1995). Across the Australian health system, this would have resulted in approximately 230,000 preventable adverse events and up to 14,000 preventable deaths in that year (Van Der Weyden 1995). Moynihan (1998, p.4) has estimated that this translates to one in six Australians admitted to hospital being treated for an injury caused by the health care system.

The confronting nature of such statistics highlights the discomfiting fact that modern medicine often has a high price (Watts, 1996, p.342), contrary to its intent. Many, including those from within the medical profession, now believe that this price is far too

high (Institute of Medicine, 1999). At the broader level, two factors contribute significantly to this situation.

First, there is increasing evidence from the international research community that a significant proportion of health care activity is not only ineffective and inefficient but also inexplicable, and in many cases unevaluated (Evans and Stoddart, 1994, p.39). For example, referring again to our childbirth example raised in chapter two, in the 1970s, concerned medical practitioners singled out obstetrics and gynaecology as the areas of clinical practice least likely to be supported by “hard” scientific evidence (Moynihan, 1998, p.219). Estimates of what percentage of procedures have been formally evaluated for safety and efficacy vary, with some estimates as low as 15 per cent (Coleman, cited in Easthope, 1998, p.276). This situation has fuelled the perception that the rush to introduce new tests, pharmaceuticals, devices and operations has rarely been matched by a willingness to thoroughly evaluate their associated risks and benefits for patients (Moynihan, 1998, p.6).

Combined with the concerns over the lack of safety implicit in much of medical practice, many also believe that modern medicine is fundamentally incapable of rendering sufficient levels of care and compassion. As explained by Watts (1996, p.361):

To pursue this demanding trade . . . [doctors] need sophisticated equipment such as brain scanners, fetal monitors, endoscopes, lasers, radioactive chemicals, artificial hearts, and computers. Learning to handle these things may take months or years; to use them safely often absorbs much of the doctor’s attention. It is understandable that patients may feel alienated, and begin to wonder if the doctor has forgotten that they are not merely malfunctioning biological mechanisms, but people with problems that go beyond the biological. The doctor as a healer has been replaced, to a varying extent, by the doctor as a body technician. Although grateful to receive this form of assistance, most people do not find it sufficient. They need someone prepared to relate to them on a spiritual and human level, and able to appreciate their distress. Sympathy of the kind that a garage mechanic might express when reporting a broken crankshaft is not enough.

The orientation of biomedicine around the explicit (economic) interests of the providers of medical services, as opposed to consumers, has created an environment of disenchantment and suspicion. Indeed, in the eyes of some, the medical profession is “inebriated by its own status, wealth and prestige” (Moynihan, 1998, p.12). But beyond

this sense of disdain, neither governments, businesses, doctors nor consumers are satisfied with systems of health care that are costing more and delivering less real health gain to fewer people. Change is inevitable. In the meantime, though, consumers are increasingly “voting with their feet” en masse and actively seeking other ways to improve their health status.

The “alternatives”

Alternative, complementary, or “other” medicine can be generally defined as those practices used for the purpose of medical intervention, health promotion or disease prevention which lie outside the dominant tradition (Micozzi, 1996, p.5). It embraces a great many different traditions, which over the years have been labelled anything from “marginal”, “quasi-marginal”, “fringe”, or “quack”, to “holistic”, “traditional” or “complementary” (Richman, 1987, p.208). Table 6 highlights a sample of the most popular non-medical approaches that have survived into the twenty-first century, and which stem from different philosophical and practical origins.

Table 6: Complementary, alternative or other medicines

Category	Other Medicines
Comprehensive Systems	Ayuverdic Medicine, Anthroposophy, Herbalism, Homoeopathy, Naturopathy
Spiritual And Mental	Faith Healers, Spiritual Healers, Mental Imaging, Past-Life Regression, Primal Regression, Transcendental Meditation
Energy Work	Acupuncture, Acupressure, Crystal Healing, Polarity, Reflexology, Reiki, Shiatsu, Therapeutic Touch
Dietary Therapies	Bach Flower Remedies, Colonics, Gerson Therapy, Macrobiotics, Pritikin Diet, Vitamin Therapy
Manipulation	Alexander Technique, Chiropractic, Cranialsacral Therapy, Feldenkrais, Massage, Osteopathy, Rolfing, Tai Chi, Trager, Yoga
Diagnostics	Applied Kinesiology, Biorhythms, Iridology, Kirlian Photography, Psionics, Radionics
Other	Aromatherapy, Colour Therapy, Hydrotherapy

Source: Germov, 1998, p.272.

There are a number of reasons why other medicines are appealing, which Sharma (1995, pp.373-375) has outlined as including: the sense that conventional medicine fails to get to the causes of chronic illness or to take a preventative approach; the fear of drugs that might become habit forming, or the dislike of side effects of particular drugs; the fear or dislike of forms of treatment that are seen as too radical or invasive; the perceived inability of conventional medicine to cope with the social and experiential aspects of

medicine; and the dissatisfaction with the kind of alienating relationship between doctor and patient which people feel that conventional medicine requires or presupposes.

Those sentiments are increasingly found to be common within western society. As mentioned in chapter two, studies indicate that a significant proportion of consumers in western nations are now subscribing to non-biomedical approaches, including acupuncture, naturopathy, and homeopathy (Anon 1996; Shenfield et al. 1997). In addition, more and more general practitioners across the industrialised world are incorporating complementary treatments into their practices (Hall and Giles-Corti 2000). Within Germany, it is estimated that 95 per cent of all general practitioners now use some form of complementary therapy. While the figures are not necessarily as high throughout the rest of the OECD, research suggests that some general practitioners have a high level of interest in other therapies (Hall and Giles-Corti, 2000, p.602). For example, an Australian study exploring the knowledge, attitude and referral patterns of general practitioners in Perth found that 75 per cent of those surveyed had formally referred patients to alternative therapists (Hall and Giles-Corti, 2000, p.602). Such significant patterns of usage have led governments to acknowledge that treatments such as chiropractic, acupuncture, hypnosis, or meditation are becoming part of mainstream health care, and furthermore, that the term “alternative” no longer reasonably applies to many non-biomedical treatments (Moynihan, 1998, p.249). Despite this, the biomedical model is still portrayed by the medical-industrial complex as the dominant approach to health care.

Broadly, there are three “other” or non-biomedical models of health care that are widely discussed: the biopsychosocial model, the ecological model and the social or new public health model.

The biopsychosocial model

The biopsychosocial model is based on a variety of closely related perspectives, focusing on the interactions between biology, individual psychology and society (Petersen, 1994, p.20). Embraced in particular by the nursing profession as the model for practice, the biopsychosocial model exists in contrast to the reductionist aspects of the dominant tradition. It attempts to include the patient and the illness in regimes of care. The task of the physician is to weigh up the contribution of social, physiological

and biological factors of illness, as well as the capacity of the patient to be a “partner” in their own care (Knight, 1998, p.144).

The model, in attempting to broaden the concept of health, is promoted as a holistic perspective. Additionally, it is viewed as an attempt to build credibility for nursing practice and to simultaneously differentiate nursing’s knowledge base from that of medicine (Petersen, 1994, pp.20-21). The model, however, is still characterised by an “uncritical faith” in the scientific method for explaining the interactions between physical, psychological, and social aspects of life (Petersen, 1994, p.21). It is firmly fixed within the dominant paradigm of individual care where an individual’s health is restored by removing the symptomatic factors relating to breakdown, such as infection or disease. Accordingly, the approach is criticised for not acknowledging the impact of structural or broader economic, social and environmental factors impacting upon an individual’s health status and for not sufficiently accommodating aspects of personal experience. Over time, the biopsychosocial perspective has become seen as rather rhetorical, and as likely to strengthen rather than challenge the dominant health ethos (Knight, 1998, pp.144-145).

The ecological model

The ecological model, otherwise known as the human ecosystem model, seeks to shift the emphasis from “a simplistic, reductionist cause-and-effect view of the medical model to a complex, holistic, interactive hierarchic systems view known as an ecologic mode” (Hancock, cited in Knight, 1998, p.145). Considered the product of the late twentieth century’s trend to systems theory, it attempts to analyse the behaviour of individuals or systems within the context of a larger environment (Larson, 1991, p.5).

The ecological model is primarily concerned with “the quality of life in relation to the development of biological and geological resources, of urban and rural settlements, of industry and technology, and of education and culture” (Knight, 1998, p.146). In this sense, it represents a paradigm shift in thinking about health, from an individual perspective to a “planetary” perspective (see Drengson 1983). At the centre of the ecological model is the “mandala of health”, which asserts that factors of human biology, personal behaviour, and the psychosocial and physical environments affect health outcomes in a holistic manner (Hancock 1985). While the model promotes

health as an outcome of a stable and safe ecosystem and an equitable distribution of wealth, it has also drawn criticism (Knight, 1998, pp.145-146). Because it is so broadly defined, the ecological model is perceived as potentially leaving too much to the imagination, and as being difficult to operationalise (Larson, 1991, p.6). Nonetheless, it is closely aligned with the new public health model, which is attracting attention from the growing health awareness consumer movement.

The social or “new public health” model

The new public health model extends that traditional notion of public health that focuses on environmental health, preventative medical services, and processes of social reform. The former model was perceived to reject the consideration of health issues in terms of social relations, and to ignore the interdependence of health and social and physical environment. In addition, the traditional public health approach sometimes led to processes of victim blaming, whereby individuals were held responsible for not necessarily making “optimal” or “right” life-style choices (Chu, 1997, pp.2-3). Increasing health inequality and more research on social capital, social cohesion, equality, and health paved the way for a change in thinking to a more holistic approach.

Kickbusch (1989, p.267), as the principal exponent of the new model, argued for a reorientation of the definition of public health to reflect quantitative and qualitative approaches to promoting health. Such a definition would reflect the social, mental, spiritual, and physical dimensions of well-being and serve to promote investment in initiatives that create, maintain and protect health in accordance with its value as a core resource for the individual, and for the community and society as a whole.

The new public health model, like the rapidly expanding field of population health, is underpinned by principles including creating supportive environments, strengthening community action, developing personal skills and reorienting health services (see Petersen and Lupton 1996; Kawachi, et al. 1997; Baum 1998; Marmot and Wilkinson 1999; UK Health Equity Network 2000). First promoted by the WHO in 1977, this model, which firmly equates health with overall and improved living standards, has since gained international recognition and broad acceptance (Chu, 1997, p.3). The WHO’s Commission on Macroeconomics and Health (2000-2001) has contributed significantly to this field. It established the importance of investing in health to promote

economic development and poverty reduction, and argued that a global partnership between developing and developed countries could save at least eight million lives *each year* by 2010 (WHO 2001). As highlighted earlier, such an interdisciplinary health focus provides long-term scope to improve the allocative efficiency of health expenditure. In short, it may be possible to reduce overall health costs, or at least their growth, as healthier people generally require less health care.

Closely related to the social or new public health model is a growing movement *within* the medical tradition to embrace evidence-based medicine. This movement is consistent with the diminishing effectiveness of more and more state-subsidised health care, and also the growing dissatisfaction with the conventional but alienating doctor-patient relationship. Evidence-based medicine is a simple concept that proposes wide-ranging changes to medical knowledge and practice. As Moynihan (1998, pp.13-14) points out, evidence-based medicine necessitates that,

doctors make decisions about treatments based on good-quality evidence, not simply their personal experience, the 'expert' opinion of their colleagues, what they remember from medical school or what they have recently been told by drug company representatives. It means making sure, when possible, that treatments have been rigorously tested in independent, sound, long-term studies. It means researchers making sure the results of those studies are made available to doctors and to patients.

In this sense, evidence-based approaches also seek to change the traditional role of the practising physician. At its core, the emphasis is on moving away from a mode of practice where the doctor is seen as the authoritarian, all-knowing professional, to becoming more of an authoritative carer, working with patients in deciding the optimal regimes of care (Moynihan, 1998, p.14).

Archie Cochrane was considered one of the foremost exponents of this approach drawing on his experience as a medical officer during World War II. Cochrane came to stress the recuperative power of the human body, and within that domain, the need for doctors to consider whether medical interventions are more effective (Moynihan, 1998, p.14). On the basis of his example, an international network of academic centres known as The Cochrane Collaboration was established to systematically evaluate and summarise the best medical information available from randomised clinical trials

(Larkins, 1998, p.170). While a relatively new initiative, evidence-based medicine presents great scope to transform medical practice. Indeed, within this regime of health care, medical intervention could become just one of a wider horizon of health care options (Moynihan, 1998, p.259). Given the rising popularity of these contending health-care approaches and the critiques of the biomedical model is it sustainable?

Is the biomedical model of health sustainable?

The broad consistency between complementary or other health models (Germov 1998, p.317) and the profound challenges faced by biomedicine make it necessary to assess its viability as the dominant model. The primary question is whether there is sufficient evidence to accept the continued domination of the biomedical model (and the explicit set of social choices that empower and ultimately sustain it), or whether there should be more of a balance between biomedical and other approaches, or whether it should be sub-dominant?

Consideration of key issues such as equity, consumer satisfaction, efficacy and cost strongly suggests that over time there is decreasing functional justification for the continued dominance of biomedicine in its current form. In short, systems of health oriented around individualistic, curative interventions and the commercial interests associated with medicalisation appear increasingly inequitable, undesirable, ineffective, and economically unsustainable.

Instead, the balance of evidence provided by structuralist, feminist, post-structural, and post-modernist perspectives suggests that much is to be gained in the interests of equity, acceptability, efficiency and sustainability by reforming, even in incremental terms, how health is conceptualised and managed in western societies. Reform would involve broadening the concept of health from its overwhelming association with interventionist and especially acute care, to one that more explicitly incorporates social, economic and environmental elements. This harnesses the idea that despite its ideological and practical flaws, biomedical care still has much to offer. Additionally, it implies that by accounting for issues such as class, gender, culture, and environment in a manner consistent with the enhancement of well-being and the trade-off of economic costs,

society and western governments in particular would have a greater diversity of options to improve health outcomes.

Given this allocative context and the other health models, it is important to address how society might reprioritise health care in a way that effectively challenges the dominant model and provides a realistic transformative approach. Many possibilities exist, however, they fundamentally rely on a greater emphasis on disease prevention and health promotion.

Looking forward: a realignment of health care priorities

In financing terms, the bulk of health care resources are expended on specialist medical care, overwhelmingly delivered through the acute or hospital system. In industrialised nations, levels of acute expenditure are higher than those expended on primary care, which in turn is many times greater than that spent on public health. Primary care incorporates basic medical services made available at the community level, for example, through a family/general practice or community health service, and is the gateway to more intensive and specialised medical services, such as acute hospital and institutional care (Swerissen and Duckett, 1998, p.16). While it is reasonable to expect, within the established biomedical mode of health care production, that more state funds would be expended on acute care, the extent of this funding mix is inconsistent with a growing body of evidence that suggests that additional resources should be channelled into other areas (Starfield 2000).

Moreover, the existing expenditure on public health throughout industrialised nations does not reflect the significant rise of interest in preventive policies witnessed over the past decade. Public health is still a “fringe activity” that accounts for “little more than two per cent” of total health expenditure in developed economies (Leeder, 1999, p.71). In Australia, this figure is 1.5 per cent (Palmer and Short, 2000, p.251).

The low funding of public health is indicative of the balance of competing political and policy interests. Additionally, it is indicative of the ongoing academic debate about the cost effectiveness of preventive services (see Russell 1986). Consistent with the tenets of the new public health model, increased expenditure on preventive measures would be

premised on some evidence of efficacy and also cost effectiveness. However, given that public health is funded from such a low base, it is quite possible that even minor changes in funding would generate significant benefits.

Increased funding would allow for greater efforts in new public health priority areas such as women's and men's health, such as integrated food and nutrition policies and targets for significantly reducing the production, marketing and consumption of tobacco and alcohol (Palmer and Short, 2000, p.225). Greater funding would, in turn, also allow for trialing new approaches, for there is no reason why public health should not evolve like other fields of activity. For example, biotechnological innovations may have a place in the future of public health. Indeed, if proven efficacious, safe and cost-effective relative to traditional approaches, plant-based oral vaccines and nutritionally enhanced foods could help improve public health outcomes (CDC 1997; WHO 2002b).

The case of tobacco illuminates the scope for increased public health initiatives and the growing importance of investment in public health. The globalisation of markets in tobacco products is leading inexorably to increased consumption, particularly in developing countries and among women. By the 2030s, it is predicted that without significant action, more people will die each year from tobacco than the total numbers of deaths from malaria, maternal and major childhood diseases and tuberculosis combined (WHO, 1999, pp.65-67). Effective tobacco control strategies do exist (WHO, 1999, p.65). Given that the economic costs of tobacco exceed its estimated benefits (WHO, 1999, p.68), developing nations would potentially gain much by investing in counter-advertising campaigns such as those financed by cigarette taxes.

Industrialised economies also stand to improve public health by greater investments in areas such as mental health, which affects many of the most vulnerable and disadvantaged across all societies. Within Australia alone, it is estimated that more than 20 per cent of the population will have mental health problems in their lifetime (Palmer and Short, 2000, p.283). Across western nations, research estimates that neuropsychiatric conditions, most often expressed through unipolar major depression, account for 23 per cent of the burden of disease measured in Disability Adjusted Life Years (DALYs), which are the years of life lost to premature death and years lived with disability (WHO, 1999, p.15).

Despite the burden of neuropsychiatric disease in wealthy nations, which exceeds that of cardiovascular disease and cancers,⁴ there is a significant under-investment in mental health, which is further complicated by the fact that mental health problems are frequently “misunderstood, misdiagnosed or improperly treated” (WHO, 1999, p.16). Clearly, much more can be done in this area. In the long-term, increased funding for public health would allow for new and intersectoral alliances across the health, welfare, housing, and industry sectors and provide scope for improved mental health for risk groups and the population as a whole. This broader focus is needed given the biomedical model’s poor track record in this field, which has been compounded by the fact that the zeal for the de-institutionalisation of the mentally ill in Australia and elsewhere has swelled the growing ranks of the homeless within large cities (Palmer and Short, 2000, p.291). Many of these people are significantly worse off (Palmer and Short, 2000, p.291). Beyond this human tragedy, a much greater emphasis on primary care is vital to addressing the emerging epidemic of mental health problems.

The current funding mix that favours capital and technology intensive acute hospitals also impedes the advancement of front-line or primary care, which is increasingly identified as the type of medical care that generates positive health gain (Starfield 2000). This would appear to contrast against historical evidence highlighted earlier that showed a poor and, at times, inverse relationship between the availability of medical services and improved health outcomes. However, it should be realised that primary care has historically been “badly neglected” across health care systems (Brown, 1980, p.210). Starfield (2000, p.4) argues that there are many reasons why there should be more emphasis on primary as opposed to secondary or acute care:

Specialty care is more expensive than primary care and therefore less accessible to individuals with fewer resources to pay for it: the inverse care law. Moreover, the financial resources required to pay for specialty care compete with those for primary care, thus draining capacity for just those services that are better distributed. Compared with specialty medicine, primary care is less intensive of both labour and capital and less hierarchical in organization. Therefore, it is more adaptable and capable of responding more quickly to changing societal health needs. It is also more accessible, organizationally and psychologically, than specialty care.

⁴ Cardiovascular diseases and malignant neoplasms (cancers) respectively account for 18 per cent and 15 per cent of the years of life lost to premature death and years lost with a disability in high income

A growing empirical evidence base bolsters these arguments (see Shi 1994; Franks and Fiscella 1998). However, beyond the scope for improved allocative efficiency through a greater focus on primary as opposed to acute care, there is also evidence to suggest that a greater availability of primary care physicians has an equity-producing effect on health. For example, research shows that the increased availability of primary care to combat postneonatal and stroke mortality has been most effective in areas with higher socioeconomic disparities (Starfield, 2000, p.8).

In response, governments and medical providers alike have begun to support initiatives that strengthen primary care (see Swerissen and Duckett, 1998, pp.16-18). This has become increasingly important with the cost-containment reforms of the hospital sector over the past decade that led to shorter stays and fewer beds (Decter, 2000, p.87). However, much more needs to be done to challenge the supremacy of the acute model of care embodied by the hospital, which is still one of the most powerful institutions in the industrialised world (Decter, 2000, p.59). While the symbol of the hospital as “the great cathedral of the church of health care” continues to capture the public affection and imagination (Decter, 2000, p.59), it is quite clear that it is decreasingly able to cope with what is demanded of it.

Conclusion

This chapter, in building upon the social history of biomedicine from chapter two, highlights three key points. First, and in accordance with its philosophical origins and the role of political economic factors in its rise to dominance, biomedicine constitutes a form of knowledge and practice that is subject to distinct biases. This aspect was made clear in the exploration of sociological (and especially structural) perspectives and also of alternative models of health. That exploration highlighted the importance of social, economic and environmental factors in the experience of health and illness, where emergent thought is focusing on the determinants of health (Starfield, 2000, p.9).

By way of contrast, the biomedical model places limited importance on complex causal relationships, and instead adopts a reductionist approach by focusing on the availability of professional and increasingly technological medical care. Over time, this bias has led

countries (WHO, 1999, p.15).

biomedicine to overly credit itself with the general improvements in health and the declining mortality rates evidenced from the eighteenth century onwards in Western societies. The reality is not as clear-cut. While the introduction of vaccinations for diseases such as diphtheria made a key difference to morbidity rates, biomedicine's greatest achievements can, in many ways, be seen more as political and economic. Through medicalisation processes, biomedicine has come to exert more and more influence over the way people deal with common problems. Despite the issues posed by increasing biomedical surveillance and social control, especially for minority groups such as women, the prevalence and popularisation of the biomedical model continues to capture and inspire the public affection and imagination the world over.

Beyond the biases of biomedicine, the second important point is that alternatives to the hospital-based, individually focused and technologically and professionally dominated health care that we are familiar with today do exist and are increasingly accessed. As highlighted in the previous chapter, there was nothing inevitable about the dominance of biomedicine. Alternatives have existed throughout biomedicine's history, and despite the long-standing and often-bitter struggles fought by biomedical elites against other biomedical and alternative health traditions, many of the latter have survived and flourished. Aided by the increasing popularity of other health traditions amongst medical practitioners and consumers throughout the developed world, biomedical dominance is now subject to increasing challenge from within and without. In this sense, biomedicine should be seen in an evolutionary context. As postmodern analysts rightfully assert, there is nothing to suggest that the predominant or biomedical way of seeing and knowing the human body will necessarily last (Jones, 1994, p.78). It may well be replaced by some other way of seeing and knowing the body that conforms to a different and potentially broader model of health.

The third important insight from this chapter is that the scope to think about health and health care in different ways is increasingly important given the limitations of the biomedical model, which have become increasingly visible over the last two decades. While health care is consuming greater and greater amounts of economic resources, it is now increasingly exhibiting characteristics of diminishing returns. In short, we may be reaching the fiscal limits of what biomedicine can potentially deliver for improved health (Evans and Stoddart, 1994, p.39). This situation presents a vantagepoint to

examine broadening the basis of the biomedical model away from its overwhelming association with interventionistic and particularly acute care to an increased focus on disease prevention and health promotion activities as advocated by alternate models of health.

Yet, despite these insights, the biomedical model still persists as the dominant model. It is therefore essential to examine how governments have responded to these issues in the broader public policy context. This is necessary because it is this environment that actively shapes policy issues, and consequently, the types of solutions that are sought for the crucial area of contemporary and future health care. Increasingly, policy is tied in with the process known as globalisation, and it is this aspect we discuss in chapter four.