ORIGINAL ARTICLE

Reflections on a new medical cosmology

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J Med Ethics 2002;28:81-85

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Revised version received
2 December 2001
Accepted for publication
3 December 2001

Since the nineteenth century the theory and practice of mainstream Western medicine has been grounded in the biomedical model. In the later years of the twentieth century, however, it has faced a range of serious problems, which when viewed collectively, remain unresolved despite a variety of responses. The question we now face is whether these problems can be dealt with by modifying and extending the principles underlying the biomedical model, or whether a more radical solution is required. Recent critiques of Western medicine have focused mainly on the biopsychosocial model in relation to the former approach, but it will be contended that this cannot deal adequately with the challenges that medicine currently faces, because although it addresses both the scientific and humanistic aspects of medicine it fails to harmonise them. I shall therefore argue for the necessity of a more radical approach, and suggest that what is required to accomplish this is the development of a new medical cosmology, rooted in an older and more global framework. Such a fundamental change would inevitably involve a long term process which it is not yet possible to fully comprehend let alone specify in detail. Some of the necessary features of such a new medical cosmology can, however, already be distinguished and the outline of these is described.

My aim in this paper is to provide an overview of a range of responses that have been generated by the challenges facing Western medicine, and to reflect on their ability to deal with those challenges and hence their implications for the future of medicine and health care. The central question I wish to consider is well expressed by Lamm:

Do we need a whole new paradigm to reorganise medicine around, or do we perfect the existing paradigm? Are we headed toward a utopia or a brave new world? . . . Whatever side the reader comes down on, the debate is of immense importance. Does the world have to start to recognise limits, or will science and technology continue to save us? Forty years ago this year, C P Snow raised the issue of "two cultures" and the gap of "mutual incomprehension" between the two. The health-care debate is a subset of two new cultures which tug at our minds and hearts: do we ultimately have to bow to limits or can science and technology remove all barriers? Do we continue to dominate nature or learn to live within her limits? Are we in the end children of nature or nature's conqueror?¹

The two opposing cultures referred to here are usually characterised in terms of arts and sciences, but a more accurate description would be of imagination and scientific rationalism, which makes it clear that imagination can be involved with sciences as well as arts.

I will begin by asserting that in the end we are necessarily nature's children, and we need first of all to recognise this. I will then go on to suggest that the word paradigm is too restricted a term and that cosmology is more appropriate, and I will argue that we need a new medical cosmology rather than a modified one. Finally I will outline some features of such a new medical cosmology, whilst recognising that it is not possible at present to specify the details of how it might be operationalised in practice.

WHAT IS A NEW MEDICAL COSMOLOGY?

The word cosmos comes from the Greek ("kosmos") and refers to an ordered world or universe, covering everything that there is. It has, however, come to have two somewhat different meanings. The first, and earlier conception, refers mainly to religious and cultural matters, whilst the second focuses on scientific ones to the exclusion of the wider context. The claim has then been made that it is only the history of religions which continues to interpret cosmology in the older sense and to incorporate the idea of science within religion and culture:

The history of religions is the only discipline seeking to relate two branches of learning that have been kept apart for a considerable time; that is, the humanities (including history) and the natural sciences.²

I want though to suggest that if we are to fully comprehend the nature of medicine it is vital that we also embrace this original conception. This is because in attempting to formulate a new medical cosmology it is essential to go beyond scientific matters. Indeed it is the endeavour of the past four centuries, to restrict the understanding of medicine mainly to science and technology and to separate them from the arts, which I see as being at the root of Western medicine's current problems. Having said that I can also discern countercurrents which have never wholly abandoned, for instance, the older conception of the nature of medical cosmology, as illustrated by this passage from Jewson:

Medical cosmologies are basically metaphysical attempts to circumscribe and define systematically the essential nature of the universe of medical discourse as a whole. They are conceptual structures which constitute the frame of reference within which all questions are posed and all answers are offered.³

Nevertheless the use of the expression medical cosmology is rare, in contrast with the more common use of medical paradigm (as for example, in the opening quote from Lamm

above). It was Thomas Kuhn who popularised the word paradigm, which he explicitly limited to scientific ideas,⁴ so there would seem to be a close parallel between his use of paradigm and the scientifically related definition of cosmology. The expression medical paradigm may then have gained general currency rather than medical cosmology, precisely because the orthodox view of medicine has been principally defined in relation to science, and medical cosmology continues to retain the original wider associations. If this is right, medical paradigm has become accepted as an alternative which is preferred to medical cosmology, interpreted solely in terms of science, and the contrast I want to make is then between an all-encompassing concept “medical cosmology”, and a scientific concept “medical paradigm”. It is the former which is the focus of this paper.

Three important distinctions will now be suggested in comparing these notions of cosmology and paradigm:

- (i) As already indicated cosmology will be taken to include moral and cultural as well as scientific and technical matters (or in shorthand arts as well as sciences).
- (ii) Cosmology will be used to refer to both theory and practice, whereas paradigm is principally used in relation to theory.
- (iii) Kuhn described the historical replacement of one dominant paradigm by another in terms of “paradigm shifts” which usually take place relatively rapidly (often in a period of a few years), whereas dominant cosmologies change much more slowly, over decades or centuries. Thus Callahan has suggested that there have been two main eras of Western medicine since ancient times which can be associated with different medical cosmologies.⁵ These are humoral medicine, dominant from 200 CE (Galen’s time) until 1600 CE, and biomedicine dominant from 1800 CE to the present, with some two centuries of transition from 1600–1800 CE.

The next question to be considered is whether the biomedical era is encountering insuperable problems. In the following section I will suggest that it is, and that these can only be adequately dealt with by fundamental changes which will inevitably lead to the emergence of a new medical cosmology.

WHY DO WE NEED A NEW MEDICAL COSMOLOGY?

Since the 1960s there have been a variety of challenges to the established position of biomedicine which became accepted in the nineteenth century. The following are some of the most significant of these, which in many cases overlap:

- (i) Disquiet about the focus on disease as an ontological concept, rather than on health, illness, and sickness.
- (ii) The failure of biomedicine to adequately address non-communicable disease, when compared with communicable disease, the latter being the main source from which biomedicine was originally derived.
- (iii) Questioning of the priority given to acute rather than chronic or disabling conditions.
- (iv) Challenges to the understanding of the proper boundaries of medicine and medical care, most notably in relation to mental illness, which were first raised by the antipsychiatry movement, but are equally of relevance to physical illness.
- (v) Insensitivity to the patient’s rather than the professional perspective, with consequent loss of attention to personal meaning.
- (vi) The failure of biomedicine to adequately acknowledge and incorporate political, social, and cultural dimensions.
- (vii) The inability of biomedical science and technology to encompass and comprehend suffering and healing.
- (viii) The ever-increasing expenditure on medical care, coupled with rising levels of dissatisfaction with services (a

phenomenon which has been termed “doing better and feeling worse”).

Taken collectively these issues pose formidable problems for biomedicine which, despite a range of responses, have not been resolved.

HOW SHOULD WE RESPOND?

I want to propose that there are four main types of response to the challenges to biomedicine set out above, and that some elements of each of them can be found in the current development of health policy.

They are, first, a stricter adherence to the **biomedical paradigm**, and in particular to two interrelated features of its traditional conception (a) a separation of facts from values and the priority of facts over values, and (b) adherence to the biological as the proper realm of medicine, and the exclusion of social, and in its most extreme form psychological, elements. This is essentially an attempt to deny the force of many of the challenges, by reasserting the original theoretical characteristics of biomedicine. Conditions such as chronic fatigue syndrome which have until very recently been labelled as “psychosomatic” would be regarded as suspect from this perspective, and Thomas Szasz takes this further in describing all mental conditions as not properly the realm of medicine. Hence his famous portrayal of mental illness as a myth.⁶

Second is what I shall call **biopsychosocial paradigm A**, which is a modification of biomedicine’s paradigm, and aims to retain its scientific assumptions whilst enlarging its scope to include psychological and social elements. The key problem with this approach is that it reduces qualitative accounts to quantitative data, and in doing so converts insights into meaning into causal description. There is then a loss of understanding of the patient’s illness, and as a corollary a flawed account of disease. This is a serious problem with the recent attempts by economists to provide a universal account of all health states solely in quantifiable terms, for example, QALYs (Quality Adjusted Life Years).⁷

Third is what I shall call **biopsychosocial paradigm B**, which is a modification of biomedicine’s paradigm through a humanistic addition. This gives recognition to the difficulties and distortions involved in framing qualitative issues, whether psychological or social, in quantitative terms, and so provides a separation between those appropriately considered quantitative on the one hand and qualitative on the other. This then allows for the personal and the social in medicine, which give it meaning, and provides legitimacy for them to be given prominence. It also leaves unquestioned, however, the conception of the scientific component of medicine. Hence this paradigm provides for what Evans and I have termed the “additive” approach to medical humanities, in which there remains a division and so a potential dysfunction between the scientific and humanistic aspects.⁸

There are three variants of this paradigm. The first sees the division as applying in the same way to all medical conditions, so that every condition has a biological and psychosocial component. The second categorises conditions as either biological or psychosocial, usually equated with acute and chronic diseases respectively. The third envisages a gradient between conditions which are the most biological and those which are most psychosocial, with a whole spectrum of conditions between these two poles.

Finally, the idea of a **new medical cosmology** aims to deal with the issues raised above in relation to the biopsychosocial paradigm, by setting them in a wider context. Engel was the first person to clearly distinguish the biopsychosocial model and to argue that it represents a radical change and a superior approach in comparison with the established biomedical model.⁹ Whilst acknowledging its importance in giving formal recognition to psychological and social processes in medicine, it is much less radical than Engel suggested, providing an

extension of the biomedical model rather than a true alternative to it. Thus it fits best with biopsychosocial paradigm A above.

There are a number of reasons for this, of which the following are of particular relevance in considering what would be required in establishing a real alternative in the shape of a new medical cosmology:

(a) Engel was clear that the biopsychosocial model should continue to rely on the same scientific principles as previously, so that the scientific presuppositions of the biomedical model remain secure. In biopsychosocial paradigm A the psychosocial dimension of disease is then dealt with in a similar way to that of the biological dimension. Hence the potential challenges that the behavioural sciences pose to biomedical orthodoxy become neutralised by a process of incorporation.¹⁰ In biopsychosocial paradigm B the psychosocial dimension is added to the biological dimension, so that the presuppositions of the latter remain intact.

(b) Although the scope of medical knowledge is extended within the biopsychosocial model, its scientific foundation continues to have an absolute status, as with the biomedical model. The structure of medical knowledge is not then altered by the competing ideas introduced, most notably by social constructionism. As Morris observes, the notion of illness as created by a convergence between biology and culture, in which there is a reconfiguration of medical knowledge, is not what is being proposed.¹¹ He suggests that what is required to introduce this perspective is a biocultural model rather than a biopsychosocial one, and as I have indicated elsewhere this implies that medical knowledge cannot be separated into “scientific” and “social” components but unites them through its human aspect.¹²

(c) The biopsychosocial model can potentially be further extended to include the arts as well as psychosocial dimensions, but only in a manner similar to that previously described, that is, either by incorporating them within scientific principles (model A) or by keeping them within a separate realm, and so maintaining a division between arts and sciences (model B). The latter is the most common way in which the medical humanities are interpreted, and, as I have already mentioned, Evans and I have criticised this “additive” approach for perpetuating this separation.⁸ The alternative approach we have called “integrated” because it aims to overcome this, and in doing so is closer to Morris’s biocultural conception than to a biopsychosocial one.

(d) In the biopsychosocial model the continuing reliance on scientific principles determines that the medical profession will remain as the final arbiter of what is to count as medical disease and disorder, and so determine what is considered to be the proper boundaries of medicine and health care. The differing perspectives of patients and society in general will then continue to be excluded.

For all these reasons the biopsychosocial model falls short of providing the basis for a new medical cosmology, and so is inadequate in providing a foundation for dealing with the problems of Western medicine which have been outlined. Only a more radical vision which addresses the issues dealt with in terms of a new medical cosmology will be capable of doing this. Although it is not yet possible to see in detail what this might look like, some elements of what it must necessarily contain are already discernible.

SOME ELEMENTS OF A NEW MEDICAL COSMOLOGY

The central issue which both the biopsychosocial model and the “additive” conception of medical humanities have failed to address is the separation of medicine’s technical and non-technical aspects. This has implications for all aspects of

medicine, and is particularly important in determining the structure of medical knowledge, the conception of the patient, and the organisation of practice and services. In each case the underlying problem relates to fragmentation and compartmentalisation. Thus, however comprehensive the conception of medical knowledge, the individual elements which contribute to it are not altogether commensurable and remain detachable from one another. The person who is the patient then also tends to be viewed in a fragmented way, either as a highly complex series of technical components, or with an additional but entirely separate human component. Following this pattern the organisation of practice and services is also greatly specialised and differentiated. This produces inherent difficulties in assimilating them to a common purpose, and so they resurface continually, however much attention is paid to overcoming them. Inevitably this has serious detrimental consequences for the management of patients.

As all these issues are interrelated, if any new approach is to be successful it must be capable of dealing with them in the round. Hence the need for a comprehensive conception uniting theory and practice, and so for the use of a global term such as cosmology, rather than paradigm, which is used more restrictively. Several features of a new medical cosmology that follow from this are highlighted here:

(i) Goals and values

Western medicine and health care have been driven by the Enlightenment project, which entails a constant drive towards the perfection of medicine. It derives from the notion that human reason can describe nature so that man has the ability to control it, in the case of medicine by understanding and correcting the structure and function of the body. The goal is then one of constant improvement along a well understood theoretical route, the direction of which is taken for granted as self evident. McKenny describes this process as follows:

In the case of biomedicine, efforts to spell out the utopia modern medicine will usher in are no longer needed; it is enough simply to keep pushing the frontiers of life extension, genetic control, forestalling of ageing, and so forth. Modern technology, including bio-medicine, moves toward no ideal to be realised, but simply keeps moving forward.¹³

So although practical difficulties may abound, they are seen as challenges to be overcome, rather than raising conceptual questions about the whole enterprise.

Yet it is becoming increasingly clear that such a process is both theoretically unsound and unsustainable in practice.¹⁴ Man is himself part of nature, and so must learn how best to accommodate to it. This understanding, which underpinned humoral medicine and from which some systems of alternative medicine continue to derive inspiration, contains a different set of values from Western medicine. So if they are to be recaptured there will need to be fundamental changes. Above all this will lead to an attitude of seeking balance and sustainability rather than neverending improvement, and will necessitate a concomitant redefinition of medicine and its boundaries, (as described in the next section) as well as what is meant by medical progress. Callahan describes what is at issue here as follows:

The unlimited, expansionary progress sought by modern medicine—progress with no articulated or envisioned end and no well-reasoned priorities—is not a viable route to continued beneficial progress, nor does it supply an adequate basis for a future sustainable medicine. The idea of progress itself must now be redefined.¹⁵

Progress only has meaning within the context of particular goals and values, and in showing that this can be contested, Callahan is reminding us of this. So what constitutes the “best” medical system and “best” medical care cannot be taken for granted, and at the present juncture requires a fundamental re-examination.

Some of the issues that this will raise concern the present priority given to acute as opposed to chronic conditions, and technical intervention as opposed to personal and social care; also how far to extend methods of medical surveillance, as well as the technical prolongation of life. A further important issue of more general concern is how to deal with inequalities in health. In all these contexts it is important to stress that what is at stake is not the revision of present policies aimed at curbing what is presently seen as progress and best medical care, but of redefining these concepts so as to aspire to a different set of goals.

(ii) Definitions and boundaries of medicine and health care

Western medicine embodies the idea that it has an absolute and unitary status, so that the boundaries of medicine and health care are fixed. The concept of disease is then privileged, when compared with health, illness, and sickness, as a means of providing this status. By focusing on health and describing it as a mirage Dubos was one of the first authors to challenge this conception:

The kind of health that men desire most is not necessarily a state in which they experience physical vigor and a sense of well-being, not even one giving them a long life. It is, instead, the condition best suited to reach goals that each individual formulates for himself . . . the satisfaction which men crave most, and the sufferings which sear their lives most deeply, have determinants which do not all reside in the flesh or in the reasonable faculties and are not completely accounted for by scientific laws.¹⁶

From this perspective medicine and health care cannot have fixed or determinate boundaries, but are constantly being renegotiated, and because they are derived from goals and values concerning our lives as a whole, there must be an interpenetration between medicine and other areas of life. This should not lead to the conclusion that any resolution of these issues is as acceptable as any other, but rather that the task of redefining medicine is inevitably unending, and one in which although progress is possible it is not towards an exact or predetermined end.

(iii) The reconfiguration of medical knowledge

If medicine is no longer conceived as having a determinate boundary, then the form of medical knowledge must also be reconceptualised, not simply as one set of knowledge being replaced by another, but as a reconfiguration of medical knowledge. The following are some interrelated aspects of this new understanding:

- (a) Medical knowledge contains an inescapable element of indeterminacy and uncertainty, or a mysterious quality.¹⁷
- (b) Medical knowledge is in part constructed through a joint project involving patients, professionals, and society, and so involves a multiplicity of gazes, rather than any one privileged gaze.
- (c) Medical knowledge is a meld of the technical or objective, and the humanistic or subjective, united by its human dimension.
- (d) Technical knowledge is traditionally understood as being concerned with causes and as being generalisable, and in contrast humanistic knowledge with personal and social meanings. There is now increasing recognition that this dualistic

interpretation of universal and existential knowledge is problematic in medicine¹⁸ so that all medical knowledge is concerned with judgments about the appropriate form and degree of transferability, according to the particular context. Medical research methods will then need to be revised to reflect this.

(iv) Healing and the healer

All major systems of medicine, both historical and contemporary, contain as a central feature the notion of healing, and a respected role for particular people who are designated as healers. Healing has its origin in religious ideas and concerns the restoration of wholeness in an all-encompassing sense, so transcending the technical/humanistic division which is characteristic of Western medicine. Despite this division, even in Western medicine the tradition of the healer has not yet been lost, although it is under threat. Healers, whether shamans, humoral physicians, or contemporary Western practitioners, rely on the indivisibility of their technical and charismatic power, the technical aspect of their work only having meaning in relation to the personal and social aspects and vice versa. Thus healing has a spiritual and mysterious quality which transcends scientific rationalism, and in our society is most obviously embodied in general practice in the figure of the old style family doctor.¹⁹

Whilst healing is often considered to be less important in hospital medicine, especially in relation to acute conditions, this needs to be challenged, as Lown has argued in relation to the work of hospital physicians.²⁰ The problem in giving due recognition to the role of healing in hospitals arises because the values and practices associated with scientific rationalism have mainly been developed within laboratory and hospital medicine, and these tend to undermine the very notion of healing in the sense in which it is characterised here. To compound this the same underlying principles are being extended to the management of medical care, and even general practice is increasingly under pressure to conform.²¹ This is because the Western system of medicine as a whole continues to be framed in relation to the knowledge and practice derived principally from the methodology and techniques of laboratory—and hospital—based research and also is becoming ever more highly managed by external authorities. Hence it is important that the role of healing and the healer be rehabilitated in a revised form as central to any new system of medicine and health care, and be seen as integral to all parts of it.

(v) Medical education

Downie has argued for the teaching of humanities as part of medical education, because “the doctor needs to be able to make considered judgments, and a developed sense of judgment has a humanistic element as a component means”.²² If both the arts and sciences in medicine are to be reconceptualised as proposed here, however, it is the non-rational as well as the rational aspects of both of them which will need to be jointly captured. The development of imagination and critical reflection should then permeate the whole curriculum, and will require an interdisciplinary perspective, involving all aspects of theoretical and practical learning. The acquisition of factual knowledge and technical skills will not then be downgraded, but rather be placed within a different and wider context. The objective will be to provide a very general framework for lifelong learning, which will incorporate but also go beyond a set of specific competencies. The General Medical Council’s current recommendations for medical education,²³ although in line with these proposals, do not go as far as this.

(vi) Collective responsibility

The medical paternalism associated with the biomedical model, which was clearly articulated in Parsons’s account of

the sick role,²⁴ viewed medical responsibility as resting almost entirely with the doctor, the patient's responsibility being limited to following doctor's orders. The increasing dissatisfaction in recent years with such medical paternalism, famously expressed by Illich in *Limits to Medicine*,²⁵ has led to a general upsurge in interest in patient autonomy. One effect has been a partial redrawing of the boundaries of professional and patient responsibility. This change in the moral and social norms of medical practice has mainly been seen as one of patients wresting unwarranted power from doctors, and so of a straight transfer of certain elements of responsibility from doctors to patients. Certain aspects of this situation have, however, largely gone unquestioned. First it has been assumed that the core of medical knowledge is technical and so remains the province of doctors and is their sole responsibility. Hence reapportioning responsibility concerns only the humanistic aspects of medicine, including when and how to apply technical knowledge, and is regarded as a competitive process. The technical/humanistic division in medicine is therefore left intact, and there is no sense of a new collective approach to the restructuring of medicine as a whole that would follow from the understanding of medical knowledge described above. Any new system must then encompass a different approach to responsibility, which takes account of these issues.

CONCLUSION

For some forty years the traditional system of Western medicine and the biomedical model on which it is based have come under increasing challenge. During this time there has been much debate about the need for a new medical paradigm, and the biopsychosocial model has captured most attention as a possible successor to the biomedical model. Although it has been interpreted in different ways the biopsychosocial model is in essence a revised and extended version of the biomedical model, so that many of the assumptions of the original model remain intact. My central claim is that any such modification of the orthodox biomedical paradigm is inadequate to the problems which now face Western medicine. What is needed is a more thoroughgoing re-examination to replace the theoretical and practical structure of biomedicine with a new medical cosmology. Unlike a paradigm shift, the emergence of a new medical cosmology involves a slow and long term process of change, and it is not yet possible to comprehend in any

detail what the outcome of this might be. Some of the necessary features of any new medical cosmology are already discernible, however, and have been described in outline.

ACKNOWLEDGEMENTS

I would like to thank Martyn Evans and Steve Edwards for their comments on this article.

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