***Epidemiology, Nursing
and Healthcare***

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***Epidemiology,
Nursing
and Healthcare***
A New Perspective

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CONTENTS

<i>Preface</i>	ix
<i>Acknowledgements</i>	xvi
1 Introducing epidemiology	1
2 Issues in health and disease	35
3 Nursing, epidemiology and the National Health Service	63
4 Health information and statistics	84
5 Planning healthcare services and epidemiology	107
6 The application of epidemiology in nursing practice	147
7 Research evaluation and utilisation: the role of epidemiology	189
<i>References</i>	213
<i>Index</i>	233

Firmly embedded within medicine, and adopting the paradigm¹ of the natural sciences, traditional epidemiology is ill equipped to contribute to a model of nursing² characterised by holism and naturalism. However, in an era when the planning, provision and evaluation of health services are increasingly fashioned on the basis of 'hard' statistics and 'objective' measures of need and quality, the discipline of epidemiology has gained new prominence. The restructuring of the health service and the emergence of the internal market have precipitated major changes in the philosophical and organisational character of the NHS. Quality assurance and evaluation programmes are being developed to maximise the effective and efficient delivery of care to patients, who have been transformed into consumers. Planning healthcare within this new environment demands a greater emphasis on the development of good information systems, widespread and effective health technology assessment, timely economic evaluations, and appropriate health need and health gain measures. Such initiatives and strategies are deemed vital if the targets outlined in *The Health of the Nation* (Department of Health, 1992a) are to be realised. Many of the methods traditionally used in epidemiological studies are providing the evidence to guide both research and organisational strategies in the new health service.

Within the last decade traditional epidemiology has broadened to assume two distinctive frames of reference. Historically located largely in the province of medicine, *clinical epidemiology* is a natural progression grounded in the roots of the parent discipline. Clinical epidemiology is concerned with the application of epidemiological concepts and principles at the micro-level of the clinical encounter. *Social epidemiology* considers the relationship between socio-economic factors and health. This area has generally been overlooked by hospital-based doctors and researchers, but is increasingly realised within the concepts of the new public health (Scott-Samuel, 1989) and the arguments that much of today's environment gratuitously damages people's health (Draper, 1991). This latter aspect is addressed in the new social epidemiology, which encompasses *popular epidemiology* – a synthesis of political

1 A paradigm, following Kuhn (1970, p. 175), is 'the entire constellation of beliefs, values, techniques, and so on shared by members of a given community'.

2 For the sake of brevity the term nursing will be used throughout this text to denote the nursing, midwifery and health visiting professions.

activism and lay knowledge acting to pursue scientific knowledge and political change.

Few nurses, even those who have completed diploma or degree courses, have had the opportunity to study either clinical or social epidemiology. Yet this subject is central to much of the work within nursing, particularly in the community but also in the hospital setting. Several approaches to healthcare research fall within the boundaries of the subject, and many nurse researchers have unwittingly utilised epidemiological designs in their work. Traditional epidemiology has retained its quantitative methodologies within a 'positivist' framework, and as such will have much to offer nurse researchers following a similar path. Those who adopt more qualitative approaches often eschew epidemiology, regarding its methods as anathema to the understanding of a social world. Likewise, many epidemiologists dismiss qualitative designs as mere anecdote. However, both approaches have their strengths and limitations, and more recently arguments for the necessity of both methodologies have been put forward (Jones and Moon, 1987).

The Briggs Report (1972) catalysed the movement to create nursing as a research-based profession. Numerous official documents since then (for example, *A Strategy for Nursing* (Department of Health, 1989a) and the *Report of the Taskforce on a Strategy for Research in Nursing, Midwifery and Health Visiting* (Department of Health, 1993a)) have reiterated the call for nursing practice to be grounded in scientific research. The mechanisms by which this may be achieved are less clear, and widely debated (Hardey and Mulhall, 1994). Should all qualified nurses undertake research? What constitutes research awareness? Who should translate research for practice and how should this be achieved? Whatever the outcome of these discussions it is clear that a considerable body of nurses, health visitors and midwives will find it increasingly important to read, understand and evaluate research articles. For the busy professional, however, keeping abreast of 'the literature' has become a daunting task. Clinical epidemiology offers a set of skills which enable healthcare workers to read and organise this material in a systematic way.

But clinical epidemiology provides more than a framework for research or a method for literature evaluation. It is a practical tool which all health workers, including nurses, can and should make use of in their everyday practice. The nursing process encompasses a cycle of assessing, planning, implementing and evaluating care (Roper *et al.*, 1990). Medicine has its own cycle of history-taking/examination, diagnosis, treatment and evaluation. Although the aims and strategies

of medicine and nursing differ dramatically, and their focus on the particular or the whole respectively mark out this difference, parts of their 'processes' are remarkably similar. Both rely on gathering information of various types (for example, the results of biochemical tests, physical signs and symptoms, cultural histories, social circumstances) through an interaction with the patient, either alone or with his or her family. Such interactions may be formal, such as occurs on entry into hospital, or they may form a more subliminal part of everyday ongoing interactions with the client. The information thus elicited forms the basis for answering certain questions. In the case of medicine these might be: 'Is this person sick?'; 'Would further tests back up my "clinical" diagnosis?'; or 'What is the optimal form of therapy for this condition?'. In clinical nursing the patient has frequently already been assigned a label or diagnosis, and perhaps a treatment, by the doctor. Nevertheless, similar types of question arise concerning the nature, frequency and format of the nursing care needed to assist clients to fulfil their individual physical, psychological or social requirements. Although the frameworks of Midwifery and Health Visiting are rather different, with their emphasis on screening for and promoting 'normality' (for example, by advising on diet in pregnancy, or by monitoring the growth of babies born prematurely), the process of information gathering remains central.

This information forms the basis of the decisions that healthcare workers make, either in conjunction with their clients or in isolation. The course of action that individual nurses take varies with each new encounter, and is influenced by their own knowledge bases and experience, the experience of colleagues, the structural and processual sociocultural context of the encounter, the research literature available on the subject and many other factors. Nurses are attempting to particularise to each individual their prior experience as derived from similar encounters. Are there strategies which make this process and thereby the process of care more effective? Clinical epidemiology aims to provide a scientific basis for the subject of clinical 'observations' (defined in the broad sense discussed above). Fletcher *et al.* (1988, p. vi), discussing clinical epidemiology and medicine, state that the former is concerned with 'the best possible evidence about the actual effectiveness and efficiency of medical care and health services at a time of increasing complexity of what we might do for patients and an increasing recognition that we should not do many things and we cannot do all'. In other words, it is a method of scrutinising the validity of the clinical judgements which all healthcare professionals make in their everyday practice.

The history of traditional epidemiology and the recent development of social and lay epidemiology provide the basis for a fundamental challenge of many of the taken-for-granted precepts which underlie the current provision of healthcare in the UK, for, since its inception in 1948, the National Health Service has been concerned not with health, but with medical services. Indeed, the British Medical Association in the 1930s argued this very case. Preventative medicine and health promotion have, with some notable exceptions (for example, the vaccination programmes), taken a back seat. After the NHS was set up the vigorous and effective work of the early medical officers of health petered out or was suppressed and ignored (cf. The Black Report, 1980; The NACNE Report, 1983).

However, since the dramatic decline in the rates of infectious diseases, the challenges to improve health and prevent illness are predominantly to be found in more complex problems such as cancer and heart disease. Although it may be argued that all biological disease is only manifested as sickness through the social world (Frankenberg, 1980; Young, 1982), the contributions of both biology and sociology to an explication of the underlying causality of these more complex diseases is more readily understood.

A complication arises therefore as disciplines such as sociology and medicine, with fundamentally different epistemologies and differing theoretical approaches, attempt to tackle the same problems. The difficulties do not lie only with paradigm incompatibility; each profession will be jealously guarding its particular territory and area of expertise against intrusion from outsiders. However, it is often at the boundaries of disciplines – nursing, medicine, sociology, epidemiology – that more radical interpretations and innovative strategies are born. The relationship between disciplines such as anthropology and epidemiology remains largely neglected (Trostle, 1986). Similarly, although nursing has a patchy history of utilising epidemiological designs, there has been little or no exploration of mutual or overlapping concepts and the new insights which they might bring to both disciplines.

To summarise, nursing in its consideration of epidemiology might benefit from any or all of the following:

- a model for quantitative nursing research
- a strategy for evaluating the clinical nursing research literature
- a framework for making clinical decisions
- a mechanism for the effective and efficient planning and delivery of nursing services to **those who most need them**.
- an opportunity to enrich current nursing concepts, or to create new and mutually enhancing shared theory.

ABOUT THIS BOOK

The purpose of this book is to explore epidemiology, its knowledge base, ideology and practice in a nursing context. The book may be read in its entirety, or separate chapters may be consulted as required. However, the text does follow a logical sequence in situating epidemiology within nursing and the wider concepts of health and sickness; examining its role in the planning and delivery of healthcare in the new NHS; and finally considering a specific aspect of such care – nursing and the research associated with it. Although methods will be discussed and explained where appropriate, the overall aim is to explain epidemiology in terms of its importance and relevance to nursing in the 1990s. The approach will encompass an examination of specific issues important to both epidemiology and nursing rather than provide a ‘recipe book’ on how to do epidemiological studies. This latter information is readily available in many clinical or medical texts on epidemiology.

Chapter 1 introduces the subject matter of epidemiology through a consideration of its history and the essential principles, concepts and research designs which underpin the discipline. Some initial indication is also given as to the potential interactions between epidemiology and nursing. In all epidemiological studies it becomes necessary sooner or later to define whether an individual is abnormal (in traditional parlance, diseased), or normal (disease-free). However, the concepts of disease and health are widely defined and hotly debated. Chapter 2 explores these issues through a critical appraisal of the concepts of disease, illness, sickness and health as derived from a number of epistemological stances. Although portrayed as objective and value-free, epidemiology and its practice is as much socially constructed as scientifically mediated. Similarly, the professional and research strategies of nursing may be constrained by organisational boundaries. It is in this context that the evolution of nursing in the NHS and how epidemiology may add to or impede future trends in development are examined in Chapter 3.

The reorganisation of the health service has resulted in an increasing emphasis on the ‘hard’ data of statistics, both as a benchmark for monitoring the quality of care, and as information for planning services. Epidemiology is the ‘feeder’ discipline for much of this work. Chapter 4 includes a pragmatic description of the derivation and compilation of healthcare statistics, but extends the discussion to question the social and political dimensions of health information. Many of the arguments raised in Chapter 4 are continued in Chapter 5, which extrapolates on how and where epidemiology may make the

maximum contribution in planning an effective health service. This leads on to a fundamental question – is rational planning possible? In an attempt to answer this, the second half of Chapter 5 explores such areas as health need, health gain and quality.

Chapter 6 turns to the more specific applications which epidemiology may have for nursing. It continues the arguments first raised in Chapter 2 concerning the different paradigms through which health and disease may be conceptualised, and attempts to situate epidemiology and nursing in this debate. Although there are many areas where epidemiology and nursing might fruitfully combine, three particular topics – health technology assessment; surveillance and control; and risk, prevention and screening – are chosen to be discussed in detail. The last chapter of the book focuses on a highly topical issue – research evaluation and utilisation. Suggesting that nursing might benefit from a more widespread appreciation and application of the methods of literature evaluation and synthesis first developed in epidemiology, the chapter also warns of the constraints of these strategies. The final section addresses the enigma of implementation through a consideration of research, knowledge and practice.

As the book developed it became clear that for each subject tackled there was a 'conventional account' which emerged from the traditional sources of epidemiological literature (i.e. journals and books either written for, or strongly influenced by, medicine), and an 'alternative account' which was gleaned from the perspectives of sociology, anthropology and occasionally nursing. This latter aspect was more difficult to unearth and appeared in widely disparate locations throughout the literature. All the chapters are presented in a particular format suited to their subject matter, but each contains elements of both the conventional and alternative accounts. On some occasions the distinctions between these two are quite clear, while on others the two accounts merge throughout the text. The two positions taken essentially rest on differing paradigms or world views – the rational science of biomedicine³, and the naturalism/interpretism characteristic of much social science. Traditionally, nursing has had little time for epidemiology, perceiving it as both a discipline, and a practice firmly embedded in positivistic science. Nursing, however, is an eclectic discipline which has drawn on many epistemologies and methodologies in its quest for a holistic perspective. Increasingly, the sterile polemic surrounding the quantitative/qualitative debate in nursing is subsiding as flexible practitio-

3 The term biomedicine refers to the predominant theory and practice of medicine in Euro-American societies.

ners move the discipline forward to a more integrated approach. It is nursing, I believe, which has the potential to bring these two epidemiological discourses together, not just for the profession itself, but for those other groups working alongside nursing in the health service, and above all for the recipients of those services.

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