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A critical review of the use in New South  
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evaluation

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University of Wollongong

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**A critical review of the use in New South Wales  
Mental Health Services**

**of the principles of psychiatric epidemiology  
to guide the setting of clinical priorities,  
resource allocation and outcomes evaluation**

A thesis submitted in (partial) fulfilment  
of the requirements for the award of the degree of:

**DOCTOR PUBLIC HEALTH**

from

**UNIVERSITY OF WOLLONGONG**

by

**Associate Professor Paul Fanning MHA, B.Ed., Dip Teach, RPN, RGN**

*Graduate School of Public Health*

## **CERTIFICATION**

I, Paul Fanning, declare that this thesis, submitted in partial fulfilment of the requirements for the award of Doctor of Public Health, in the Graduate School of Public Health, University of Wollongong, is wholly my own work unless otherwise referenced or acknowledged. The document has not been submitted for qualifications at any other academic institution.

**Associate Professor Paul Fanning**

**May 2001**

# TABLE OF CONTENTS

CHAPTER 1:	Page
An overview of epidemiology as utilised within a public health model to guide the development of health services internationally.	
INTRODUCTION.....	1
· A Brief Description and History of Epidemiology .....	2
AN EVOLVING DISCIPLINE.....	4
THE VALUE OF EPIDEMIOLOGY.....	8
· A Widening Focus .....	10
· To study the history of the health of populations and the rise and fall of diseases and changes in their character.....	12
· To diagnose the health of the community and to measure the present dimensions of ill health, to define problems for community action, their relative importance and priority, to identify vulnerable groups needing special care .....	12
· To study the working of health services with a view to their improvement ..	13
· To estimate from the group experience the individual risks and chances, on average, of disease, accident and defect.....	14
· To complete the clinical picture of chronic disease and describe its natural history.....	14
· To identify syndromes by describing the distribution, association and dissociation of clinical phenomena in populations.....	15
· To search for causes of health and disease .....	16
THE LINK WITH HEALTH SERVICES PLANNING AND RESOURCE ALLOCATION.....	17
THE WAY AHEAD.....	24
SUMMARY OF FINDINGS.....	28
CONCLUSION.....	30

<b>CHAPTER 2:</b>	<b>Page</b>
<b>An overview of the current role of psychiatric epidemiology in Australia and internationally.</b>	
<b>INTRODUCTION.....</b>	<b>31</b>
<b>EPIDEMIOLOGY AND PSYCHIATRY.....</b>	<b>34</b>
<b>THE POTENTIAL CONTRIBUTION OF JEREMY MORRIS TO PSYCHIATRY .....</b>	<b>41</b>
· The Study of the Health of Communities and the Rise and Fall of Diseases in the Population.....	43
· Epidemiology Used to Describe Chronic Mental Illness and Improve Service Functioning.....	44
<b>EVIDENCE-BASED PURCHASING- LINKING RESOURCE ALLOCATION TO OUTPUTS AND OUTCOMES IN MENTAL HEALTH .....</b>	<b>50</b>
<b>THE BURDEN OF MENTAL ILLNESS .....</b>	<b>53</b>
· The Paradox of Care Provision .....	53
· The Paradox of Development Programs .....	54
· The Paradox of Administrative Structure.....	55
· The Paradox of the Relationship with Medicine.....	56
<b>LIMITATIONS TO AN EPIDEMIOLOGICALLY-DERIVED EVIDENCE-BASED APPROACH .....</b>	<b>57</b>
· Outcomes are Generally Based on Group Data and Ignores Individual Differences.....	57
· Outcomes are Dependent on the Local Context. Hence, Poor Outcomes May Accrue from Good Services and Vice Versa.....	58
· Absence of Evidence Does Not Necessarily Mean that an Intervention is Unimportant or Ineffective.....	58
· Service Users and Carers May Have Different Approaches to Researchers.....	59
· Demonstrated Effectiveness Is No Guarantee of Deployment in Practice.....	60
<b>THE EVOLUTION OF MENTAL HEALTH CARE AND IMPLICATIONS FOR EPIDEMIOLOGY .....</b>	<b>62</b>

	Page
THE CURRENT STATUS OF PSYCHIATRIC EPIDEMIOLOGY .....	68
EPIDEMIOLOGICAL STUDIES OF INTERNATIONAL SIGNIFICANCES FOR MENTAL HEALTH .....	70
· Chicago study .....	70
· Monroe County Study .....	71
· Midtown Manhattan Study .....	71
· New Haven Study .....	72
· Stirling County Study .....	72
· NIMH Epidemiological Catchment Area Survey .....	73
· Contemporary Epidemiological Studies .....	74
APPLICATION OF RESEARCH FINDINGS TO CLINICAL PRACTICE .....	77
SUMMARY OF FINDINGS .....	79
CONCLUSION .....	81



**Current approaches to clinical priority setting, resource allocation and outcome evaluation in New South Wales Mental Health Services.**

<b>INTRODUCTION</b> .....	83
<b>CURRENT FUNDING MODELS IN NSW AND AUSTRALIA</b> .....	87
· Resource Allocation Formulas.....	89
· Needs Index Mental Health .....	93
· Index of Disadvantage.....	94
· Urban Index of Advantage .....	94
· Rural Index of Advantage .....	94
· Economic Resources Index.....	95
· Education and Occupation Index .....	95
· Mental Health Classification and Service Costs Project .....	97
· National Mental Health Strategy Priorities for Resource Allocation.....	102
· Resource Allocation at the NSW Area Health Service Level.....	104
<b>LINKING RESOURCE ALLOCATION AND EPIDEMIOLOGICAL ASSESSMENTS OF NEED IN TREATED POPULATIONS</b> .....	107
· Defining the Need for Treatment.....	107
· Mental Health Information Development in Australia.....	110
· Current Reporting Systems in New South Wales .....	112
· New South Wales Mental Health Information Development Program.....	114
· An Increasing Emphasis on the Mentally Ill.....	117
· The Growing Burden of Mental Illness - The Epidemiological Significance.....	120
<b>LINKING RESOURCE ALLOCATION TO OUTCOMES EVALUATION IN TREATED POPULATION</b> .....	124
· The Extent of Psychiatric Disability .....	124
· Rehabilitation - A Place and a Process.....	126
· Excess in Standardised Mortality Rates .....	132
· Reduction in Disablement and Morbidity at Primary Care Level .....	133

	Page
· Reduction of Disablement and Morbidity at Specialist Level .....	133
· Ensuring Quality of Life .....	134
· District, Regional and National Administrative Targets in the UK.....	134
· The ACHS Care Evaluation Program.....	136
· Outcomes Management Systems .....	139
· Methods of Assessing Outcomes in Community Mental Health Systems.....	140
· Multiple Domains for Evaluation .....	146
· Persistent Illness .....	147
· Differences in Point of View.....	147
· Self Reports .....	148
· Methodological Issues.....	148
· The Differing Views of Outcome Assessment .....	149
· National Mental Health Standards .....	152
<b>SUMMARY OF FINDINGS .....</b>	<b>155</b>
<b>CONCLUSION.....</b>	<b>159</b>

<b>CHAPTER 4:</b>	<b>Page</b>
<b>A critical evaluation of the application of Morris' uses of epidemiology within an Area Mental Health Service.</b>	
<b>INTRODUCTION.....</b>	<b>162</b>
<b>EPIDEMIOLOGICAL PROFILING .....</b>	<b>165</b>
· Service Gaps.....	166
· Limited Access to Acute Beds .....	166
· Community Services as Gatekeepers .....	166
· Inadequate Case Management Systems.....	167
· Insufficient Emphasis on Rehabilitation and Personal Recovery.....	167
· Undeveloped Special Needs Services.....	167
<b>MORRIS' MAJOR USES OF EPIDEMIOLOGY .....</b>	<b>170</b>
<b>MID WESTERN AREA HEALTH SERVICE - AN OVERVIEW.....</b>	<b>172</b>
· Transport .....	173
· Institutions.....	173
· Population Size.....	173
· Population Size.....	174
· Socio-economic Factors.....	174
· Health Status.....	175
· Service Utilisation .....	176
· Leading Causes of Death.....	176
· Disabling Conditions .....	178
<b>KEY REPORTING ROLE OF AREA PUBLIC HEALTH UNITS.....</b>	<b>179</b>
<b>PRIORITY TARGET POPULATIONS FOR AREA HEALTH SERVICES.....</b>	<b>181</b>
<b>AREA MENTAL HEALTH SERVICES DATA COLLECTION .....</b>	<b>185</b>
· Current Status.....	185
· Deficiencies in Information Systems for Population Groups .....	189
<b>A HISTORY OF AREA HEALTH SERVICE DEVELOPMENT IN MENTAL HEALTH ....</b>	<b>192</b>
· Overview.....	192

	Page
EVALUATION OF MORRIS' USES OF EPIDEMIOLOGY IN MID WESTERN AREA MENTAL HEALTH SERVICE .....	195
THE CONSEQUENCES OF FAILING TO ADOPT A EPIDEMIOLOGICAL APPROACH TO PLANNING, PRIORITY-SETTING AND RESOURCE ALLOCATION .....	233
· Linking Need and Workforce Requirements.....	235
· Implications for Training of Mental Health Staff .....	239
· The Neglect of High Risk Populations .....	241
· Evaluation of the Outcomes of Treatment Programs .....	245
· The Status of Epidemiological Research Within the Mid Western Area Health Service .....	251
MENTAL HEALTH DATA COLLECTION AT THE AREA HEALTH SERVICE LEVEL - A NEW APPROACH .....	253
· Financial Data .....	253
· Clinical and Epidemiological Data .....	255
· Output and Administrative Data.....	257
RESOURCE ALLOCATION AT THE AREA HEALTH SERVICE LEVEL .....	267
PLANNING MENTAL HEALTH SERVICES AT THE AREA HEALTH LEVEL .....	271
BUILDING AN INFORMATION SYSTEM .....	274
1. HISTORY OF THE HEALTH OF THE POPULATION, THE RISE AND FALL OF DISEASES AND CHANGES IN THEIR CHARACTER .....	279
2. DIAGNOSIS OF THE ILL HEALTH OF COMMUNITIES, MEASUREMENT OF THE DIMENSIONS OF THIS ILLHEALTH, DEFINING PROBLEMS FOR COMMUNITY ACTION, THEIR IMPORTANCE AND PRIORITY. TO IDENTIFY VULNERABLE GROUPS NEEDING SPECIAL CARE .....	281
3. STUDY THE WORKING OF HEALTH SERVICES WITH A VIEW TO THEIR IMPROVEMENT .....	286
4. TO ESTIMATE FROM THE GROUP EXPERIENCE WHAT ARE THE INDIVIDUAL RISKS AND CHANCES, ON AVERAGE, OF DISEASE, ACCIDENT AND DEFECT .....	289

	Page
5. TO COMPLETE THE CLINICAL PICTURE OF CHRONIC DISEASE AND DESCRIBE ITS NATURAL HISTORY .....	291
6&7. TO IDENTIFY SYNDROMES BY DESCRIBING THE DISTRIBUTION, ASSOCIATION AND DISSOCIATION OF CLINICAL PHENOMENA IN POPULATIONS. TO SEARCH FOR CAUSES OF HEALTH AND DISEASE .....	294
MENTAL HEALTH CLINICAL CARE AND PREVENTION MODEL (MH-CCP).....	299
SUMMARY OF FINDINGS .....	305
CONCLUSION.....	308

	Page
DISCUSSION .....	309
RESULTS .....	315
RECOMMENDATIONS .....	320
REFERENCE LIST .....	i-xii
APPENDIX A (APPROVED RESEARCH PROPOSAL) .....	1-38

## LIST OF ABBREVIATIONS

ABS	- Australian Bureau of Statistics
ACHS	- Australian Council Healthcare Standards
AHMAC	- Australian Health Ministers Advisory Council
AIDS	- Acquired Immune Deficiency Syndrome
AIHW	- Australian Institute of Health and Welfare
AN-DRG	- Australian National Diagnosis Related Groups
AN-MDC	- Australian National Major Diagnostic Classification
CAN	- Camberwell Assessment of Need
CCO	- Community Counselling Order
CDF	- Central Drift Factor
CGAS	- Children's Global Assessment Scale
CHASP	- Community Health and Standards Program
CIDI	- Composite International Diagnostic Interview
COAG	- Council of Australian Governments
CORM	- Clinical Outcomes Resource Management
CRISP	- Computerised Record Individual Service Plan
CSRI	- Client Service Receipt Inventory
CTO	- Community Treatment Order
DOHRS	- Department of Health Reporting System
DRG	- Diagnostic Related Group

DSM-IV	- Diagnostic Statistical Manual
ECT	- Electro Convulsive Therapy
EDIS	- Emergency Department Information System
EPSILON	- European Psychiatric Services - Inputs Linked to Outcome Domains and Needs
HONOS	- Health of the Nation Outcome Scale
HONOSCA	- Health of the National Outcome Scale for Children and Adolescents
ICD-9	- International Classification of Disorders
ICIDH	- International Classification of Impairment, Disability and Handicap
IEQ	- Involvement Evaluation Questionnaire
ISC	- Inpatient Statistical Collection
LOS	- Length of Stay
LQLP	- Lancashire Quality of Life Profile
LSP	- Life Skills Profile
MBS	- Medical Benefits Schedule
MHCASC	- Mental Health Classification and Service Cost Project
MHOAT	- Mental Health Outcomes and Assessment Training Project
MHS	- Mental Health Service
NHMRC	- National Health and Medium Research Council
NHS	- National Health Service
NIMH	- National Institute of Mental Health



NMDS	- National Minimum Data Set
NMHIDP	- National Mental Health Information Development Project
PYLL	- Potential Years of Life Lost
RAF	- Resource Allocation Formula
RDF	- Resource Distribution Formula
RSI	- Relative Stay Index
RUG-ADL	- Resource Utilisation Group - Activities of Daily Living
SHIPS	- Satellite Housing Integrated Program Support
SRG	- Service Related Group
SMR	- Standardised Mortality Ratio
VSSS	- Verona Service Satisfaction Scale
WHO	- World Health Organisation

## ABSTRACT

The development of mental health services in Australia and internationally is entering a new era. Due to landmark reports by the World Health Organisation (1996) and the Office of the Surgeon General of the United States, Dr David Satcher (1999) the area of mental illness has been given a much higher priority within health generally. In Australia the National Health Policy (1994) identified the area of mental illness as a national health priority but lamented the absence of epidemiological information to guide service planning and development. In New South Wales the report of the Chief Health Officer, Dr George Rubin (1996) highlighted the absence of even basic epidemiological data concerning the mental health of the community and called for a major effort to address this serious deficiency. It seemed to a large extent that mental health in sharp contrast to public health services generally had been shaped substantially by historical forces rather than scientific disciplines such as epidemiology. There had not even been a concerted effort to evaluate the rich reservoir of clinical and epidemiological information to be obtained from the hundreds of thousands of patients treated in public mental health services. While in classical epidemiological terms they may constitute the 'tip of the iceberg', they are the recipient of \$400 million worth of services annually in New South Wales alone.

The author is the longest serving Area Director of Mental Health Services in New South Wales and in 1996 was appointed as the New South Wales Health Department representative to the National Mental Health Information Modelling Project. This highlighted deficiencies, ambiguities and confusion in psychiatric nomenclature, taxonomies and service relationships. There were few 'baselines' to work from compared to the measurement systems in place in general health such as casemix and Diagnostic Related Groups.

The author was encouraged by senior public servants to examine the reasons for this situation and to propose a model or overall framework to guide future clinical priority setting, resource allocation and outcomes evaluation in mental health services. The methodology of this thesis is based therefore on a systematic review of contemporary literature and emerging expert opinion. There has been unprecedented access to national and international authorities and documentation has been drawn from the following sources:

- Commonwealth of Australia publications including planning and policy papers, independent reviews, published evaluations and critiques, Human Rights Commission reports

- New South Wales Health Department publications including policy documents, position papers, reports of expert working groups, annual reports, parliamentary reports, circulars, draft discussion papers, senior executive background and briefing papers
- a wide variety of Australian and international texts and journals on mental illness and epidemiology including the Comprehensive Textbook of Psychiatry which is generally regarded as authoritative
- university publications such as course notes for undergraduate and postgraduate epidemiology courses
- papers presented at international conferences on psychiatric epidemiology

The limitations of this research may be summarised as:

- its restriction to broad planning and service development elements within the total mental health system. The aim is to postulate a credible overall framework for the future planning, development and evaluation of mental health services, guided to a large extent by Morris' (1964) uses of epidemiology on an equivalent model

- elements such as mental health casemix, disability measurement and outcome evaluation are evolving and need to be incorporated into this wider model
- the argument for Morris' uses of epidemiology is related in this review to treated prevalence rates as an example of how to better inform priority setting, resource allocation and outcomes evaluation at the national, state and most importantly the Area Health Service level through capturing critical epidemiological and clinical data from the large populations in treatment in public mental health service
- the area of prevention and early intervention is not addressed in detail
- the introductory chapter concerning the contributions of epidemiology to public health generally is limited due to the vast nature of this area and is simply meant to contextualise later chapters

The **results** of this research have significant implications for decision makers at all levels. Clearly while epidemiology is extant it has not been used to its full potential within mental health. There is an urgent requirement to draw together in a coherent fashion the full range of disparate endeavours currently being implemented within mental health services and benchmark them against Morris' uses of epidemiology or an equivalent model. This will provide a

framework to guide current and future action, establish priorities and facilitate evaluation. In effect such a model will fill the void that will undoubtedly be left following the passage of the transitional National Mental Health Plan, associated strategy and reforms. Planners, researchers, clinicians and administrators require a model in which they can believe and practically support and, above all, is sustainable. This critical review systematically describes the factors that have contributed to the development of mental health services, the complexities, associated reform process and most importantly a viable, credible model for future development. The recommendations at the conclusion of this thesis represent the preliminary steps required to ensure this occurs, and will be utilised by the Department of Health and hopefully Area Mental Health Services.

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Undertaking this Doctorate of Public Health is the end point of 27 years of study and experience in the Australian public health system. Throughout this period I have been supported magnificently by my family, some of whom are no longer here to savour the finale. Thank you to all.

## CHAPTER 1

An overview of epidemiology as utilised within  
a public health model to guide the development of  
public health services internationally

# INTRODUCTION

Epidemiology is the study of the health of human populations and has had a significant impact on the development of public health services over the last 100 years. What started in the 19th century as the study of epidemics has changed significantly. Today research is undertaken not only on the biological determinants of disease, but also the relationship of social, political and economic forces. Epidemiology taps into a wide range of sources as the search for greater understanding of the determinants and relationships between health and illness are sought. This has become more important as the epidemics of killer infectious diseases have subsided and increased attention has been paid to the modern epidemics of cardiovascular disease, cancer, diabetes, mental illness etc.

Rawson (1992) noted that some epidemiologists spent their lives studying the patterns of disease occurrence and attempting to establish what is 'normal' for a given population. Most modern nations have a national centre for disease control, responsible for monitoring the occurrence of diseases and also acting as a surveillance unit. Information is analysed and utilised to ensure health services are adequately prepared to meet the challenges thrust upon them.

## A BRIEF DESCRIPTION AND HISTORY OF EPIDEMIOLOGY

Definitions of epidemiology have changed as the discipline has evolved in response to the recognition of the complexity of states of health and illness. Alderson (1983) considered epidemiology to be the study of the predeterminants of the incidence and prevalence of disease. McMahon (1977) viewed it as being concerned with the distribution and determinants of disease frequency. He extended the definition to include the mapping of disease within populations. Armstrong (1994) argued that epidemiology represented a body of methods rather than knowledge alone and is as applicable to the study of the occurrence of the phenomena relevant to health services development as to disease aetiology and prevention. Health services provision depends on an understanding of the relationship between services and populations which can be provided by the application of epidemiological concepts. Significantly, Armstrong also recognised that the evaluation of health programs against their objectives depended to a substantial degree on the use of epidemiological methods. Lilienfeld (1980) saw epidemiology as being concerned with patterns of disease occurrence and the factors that influence these patterns.

Rawson (1992) observed that epidemiology was a multi-disciplinary study that traditionally comprised several elements:

- a philosophy which among epidemiologists is oriented towards pragmatism

- a technology drawn from medicine, pathology, biostatistics
- a literature which relates to these components

## AN EVOLVING DISCIPLINE

Epidemiology grew from the need to combat the great infectious disease epidemics of the 18th and 19th century. Classic examples are John Snow's account of the tracking down of the cause of cholera outbreaks and William Budd's study of the occurrence of typhoid in an English village. The birth of epidemiology is closely linked to the development of the science of microbiology and the emergence of the microbe hunters. It is not surprising therefore that for many years epidemiology was closely linked to 'germ theory'. The advent of the Industrial Revolution and two world wars within 50 years of each other created a set of social and political conditions that drew the attention of political scientists, sociologists and anthropologists who identified casual relationships between disease, and socio-demographics. Epidemiological practice is now so vast as to allow practitioners to specialise according to their training and expertise. Epidemiology accepts contributions from a range of disciplines and strives to reach unified tested models of disease causation. Rawson (1992) observed that the science of epidemiology has been greatly enriched by the research offerings of related disciplines. A number of epidemiologists practice epidemiology as a 'pure science' based on descriptive, analytical and hypothesis testing approaches. This explains the clear linkages with medicine, statistics and research methods. The fact, however, that common ground exists between a range of disciplines ensures an overall greater contribution to epidemiological research. White (1985) noted that it was impossible to ignore the

connection between occupation (or the lack of it) and a variety of diseases. However, it takes epidemiological studies and surveillance directed towards general and high risk populations to generate sufficient numbers of affected and non-affected persons to demonstrate the strength of associations between occupational exposures and disease.

Magnus (1999) observed that criticism is often made of epidemiological work for dealing with associations in contrast with laboratory studies. He argued that this is a nonsensical distinction. In population studies the time gaps are longer; the 'noise' of other explanatory factors is greater with little scope to manipulate the conditions. For this reason, where possible epidemiology seeks to corroborate findings with other kinds of research including experimental work. Importantly, however, epidemiology can build up a formidable pattern of associations that point to a cause in a wider context than laboratory research alone.

This shift of emphasis can be traced to 1943 and the resignation of John Ryle, the Regius Professor of Medicine at Cambridge, who surrendered his position to become the first Professor of Social Medicine in Great Britain. Ryle noted that social medicine was concerned with all diseases of prevalence including heart disease, peptic ulcer, rheumatic diseases, cancer, the psychoneuroses and accidental injuries. He observed that all these diseases had epidemiologies and correlations with social and occupational conditions and must eventually be considered to be in

greater or lesser degree preventable. This British movement toward social medicine which Ryle symbolised and spearheaded was essentially a movement toward non-infectious disease epidemiology. Ryle was the first to achieve real success, although the earlier pioneering work of Rudolf Virchow, Max Von Pettenkofer, Louis Rene Villerme and William Alison should be mentioned.

Terris (1985) concluded that the concomitant growth of labor and socialist ideology amongst both workers and middle class professionals created an intellectual climate concerned with the social causes of social problems. It was this that produced the movement towards a social epidemiology and inevitable extension of the contributing factors to a health illness continuum. Terris cited the view of the English epidemiologist J A Lee that individuals involved in social medicine in the United Kingdom during the 1950's and 1960's tended to fulfil at least three conditions: (1) they were pro-Labour; (2) they were Scots; and (3) they had done something else before entering medicine. To this extent they brought a wider range of experience and philosophies to epidemiology and challenged the orthodox viewpoint.

The Society for Social Medicine in Great Britain, the International Epidemiological Association organised in the 1950's and the Society for Epidemiological Research in the United States formed in the 1960's were devoted primarily to non-infectious disease epidemiology and grew rapidly in numbers and influence. Health practices



were increasingly subject to critical analysis in order to determine their impact on disease prevention and clinical outcomes. This had significant implications for resourcing as increasingly emphasis was placed on being able to demonstrate both improved clinical outcomes with cost justifications. Much was embraced by the medical profession with epidemiologists challenging the clinical and cost benefit of certain high cost technologies and emphasising the need for greater research into prevention as well as treatment interventions.

## THE VALUE OF EPIDEMIOLOGY

Hellet (1985) summarised three valuable contributions of epidemiological research - looking for causes of disease, the surveillance of major health and disease problems and the evaluation of interventional measures designed to control major problems through the most cost-effective approaches. This is not limited to mortality reduction, but also to reduction of illness and disability. Examples include the 25 percent decline in age adjusted mortality from heart disease in Canada and the United States in the 1970's, a 30 percent decline in Canada and a 38 percent decline in the United States in age-adjusted mortality from cerebrovascular disease. Terris (1985) noted the decline in mortality from cirrhosis of the liver in the United Kingdom - from 10 per 100,000 in 1914 to the current rate of 4 per 100,000. In New South Wales each health Area routinely collects and reports prevalence data on 38 diseases/disorders. This includes the Notifiable Disease Surveillance System which monitors AIDS, Hepatitis A&C, Mumps, Measles, Pertussis, Glandular Fever, sexually transmitted diseases, etc. Information on non-infectious conditions such as cancer, cardiovascular diseases, diabetes and rural injury is also collected from the Inpatient Statistical Collection and Emergency Department Information System. This epidemiological surveillance on an Area, state-wide and national basis, ensures the continual refocussing of public health priorities and evaluation of the success of prevention and treatment programs.

Priority areas for increased resourcing are largely identified through this system, which also generates a wide range of research.

The key element underpinning surveillance therefore is an information system which routinely collects data concerning the incidence and prevalence of notifiable diseases.

The collection of this data is mandated by strict enforcement of State legislation in the form of the Public Health Act, and Proclaimed Diseases Act. Under this legislation medical practitioners and hospitals are required to report the occurrence of specified diseases. Through this system it is possible to determine numbers of new cases, where they are occurring within a population, degree of disease progression, type of treatment provided and outcomes. Backing this up is the notion of 'best practice' and to what extent this is applied in a prevention and treatment model and with what results.

The existence of the information system is as important from a public health viewpoint as recognition of the disease syndrome. The surveillance system contains several discrete elements:

- it is enshrined in legislation and health policy

- it identifies what is to be reported/measured
- this measurement is supported by a collection system - forms, etc
- health care services and practitioners understand their reporting responsibilities
- information is supplied routinely, analysed and reported
- feedback is provided to practitioners at the local level
- service delivery is modified/adapted in accordance with best practice
- monitoring of outcomes continues

### **A Widening Focus**

White (1985) concluded that the vigorous pursuit of biotechnological research has brought enormous benefits, but also some negative perturbation. He cited as an example that the medical research establishment in Australia had expended relatively little effort on studying the relationship between diet and disease and even less on attempts to influence healthy public policy and personal behaviour.

Most pioneering work has come from the *CSIRO*, but even the availability of scientifically validated information on good and bad nutrition is of little value if the community does not accept it. The argument that "it won't be eaten if it's bad for you" simply does not hold up, as demonstrated by the increasing reliance of nutritionally poor fast food. Here the contributions of psychology, behavioural science, and sociology have been invaluable in contributing to an understanding of the relationships between social behaviour and good nutrition - a social epidemiology.

There are three settings in which to study health and disease: the laboratory, the clinic and the community. What holds true in the laboratory may not be the case generally in the community, or even parts of the community. For this reason, there is a reluctance to generalise laboratory findings to the community where a range of variables may confound results.

Morris (1964) is credited by many epidemiologists as having succinctly defined a model for the actual and potential uses of epidemiology. He considered there were seven:

1. To study the history of the health of populations and the rise and fall of diseases and changes in their character

Through historical studies it is often possible to predict the likely patterns of disease occurrence within given populations. This allows epidemiologists to predict prevalence and incidence rates which facilitates disease prevention and treatment. An example is the AIDS virus where it has been possible to predict with great accuracy, based on the history of the virus, mutations, areas of peak incidence, prevention and treatment requirements.

2. To diagnose the health of the community and to measure the present dimensions of ill health, to define problems for community action, their relative importance and priority, to identify vulnerable groups needing special care

Health and illness are not homogeneous entities. It is rare to find an individual who is free of health problems. Health and illness are relative concepts and it is useful to define the latter in terms of the impact on a community through indices of mortality and morbidity. Levels of health and illness vary according to the particular population group. Higher levels of respiratory disease occur, for example, among residents of large metropolises where air pollution is a major problem. Similarly, organophosphate poisoning

is more of a problem among primary producers in rural areas. It is important to measure the expected levels of illness in a community from major disease conditions, but also the amount of local endemic disease which may be determined by a range of factors. Beyond this, it is vital to understand predeterminants of disease - why do people live in large cities, what causes the pollution and how do government policies and socio-economic factors influence this?

**3. To study the working of health services with a view to their improvement**

Increasingly, as health resources are rationed, there is an emphasis on 'evidence-based practice'. This was highlighted by Rubin (1996) in noting that government cannot afford to support practices that provide poor health outcomes. Epidemiology has an important role as, methodologically, it measures outcomes on a population basis and in an objective manner. This process links outcomes to resource allocation and is not always welcomed by vested interest groups. It also throws into relief the entire resourcing argument for primary, secondary and tertiary prevention. For many years arguments have been made for and against the distribution of resources in particular ways. Epidemiological studies will increasingly evaluate health outcomes and outputs versus the inputs (resource allocation).

4. To estimate from the group experience the individual risks and chances, on average, of disease, accident and defect

Through studies of a descriptive, analytical or hypothesis testing nature, Friedman (1980) has argued that it is possible to identify disease phenomenon for investigation, determine who is affected, to what degree, identify where the phenomenon is most manifest and answer questions as to how it occurred and likely sequelae. This again links to the important area of epidemiological prediction through estimation of factors such as attributable risk and relative risk.

Confidence levels increase as the research and data accumulates.

5. To complete the clinical picture of chronic disease and describe its natural history

As the field of epidemiological study has widened, the issue of chronicity has come under wider investigation. The natural history of many conditions, eg, rheumatoid arthritis, involves a high degree of chronicity. The treatment, rehabilitation and resourcing implications of chronic disease in the community are enormous. McMahon and Pugh (1977) observed that the financial and human cost of chronicity demanded wider investigation and



that epidemiology was in a good position to do this. The identification of conditions with a high level of chronicity also assists in prioritisation of prevention and early intervention approaches which, in turn, has the potential to save the community enormous amounts of money. An example is stroke rehabilitation where the risk factors are known and modification of lifestyle and early institution of preventative measures can make a significant difference.

**6. To identify syndromes by describing the distribution, association and dissociation of clinical phenomena in populations**

Syndromes are collections of signs and symptoms that, taken together, reflect the prevalence of specific disease conditions within a community. The distribution of these syndromes across a population is equally important in that it is possible to identify which are most common in particular sub-population. This allows the syndromes to be profiled in accordance with their association with a wide range of biological, social, cultural and economic influences. Examples include the higher levels of alcoholism and diabetes among Aboriginal populations. Identification is important for planning, resource allocation and the development/implementation of service delivery models aimed at prevention, early intervention and treatment of disease syndromes.

## 7. To search for causes of health and disease

The presence of disease indicates the absence of health. Epidemiologists seek to determine the ingredients for good health as the first point in understanding the causes of disease. This is a complicated process due to the range of factors involved - genetic, biological, social, cultural and psychological. These need to be understood at the individual, local (community) and population level. In medicine, Houston (1975) noted that iodine deficiency was a potent cause of goitre in certain low iodine areas (Derbyshire Neck). Goitre may, however, occur in areas with normal levels of iodine in drinking water due to the iodine being trapped by pollutants or blocked by the presence of fluorine.

The important point is that neither of these are universal problems, but may occur in particular communities according to local conditions.

## THE LINK WITH HEALTH SERVICE PLANNING, AND RESOURCE ALLOCATION

Terris (1985) stated that the practice of epidemiology would substantially inform public health measures of the future and permeate every aspect of the economy and society. Public health issues have posed basic questions for economic and social policy. Epidemiologists have a responsibility to educate government on the nature and extent of environmental hazards and the measures required for control. Terris referred to this as the 'second epidemiologic revolution' and envisaged it would generate major changes in agriculture and industry. Large reductions would occur in the production of tobacco, alcohol, dairy products, fatty milks and dangerous drugs. Furthermore, epidemiological research would facilitate the identification of the factors involved in the development of a wide range of diseases and link these risk factors to prevention through healthy public policies (eg, environmental pollution, social welfare) and the way resources are allocated for prevention and treatment. Lambert (1982) observed that the amazing strides in prevention of ischaemic and cerebrovascular disease would have significant population benefits due to a larger population of healthy aged who are less disabled.

White (1985) concluded that Australia had a slow start in the widespread use of epidemiological thinking directed to research, education, and the organisation of health services. However, an important signal that the purely biomedical paradigm of the past half century was outmoded was conveyed in the 1980's when, the

National Health and Medical Research Council changed its name. White considered that given new knowledge about the influence of the environment (social and physical), workplace, genetics, nutrition, exercise, stress and emotional factors, immunology etc. that there was little opposition to widening the epidemiological paradigm.

Goodman (1986) however, adopted a 'hasten slowly' approach noting that the mounting costs of acute health care place an economic premium on preventive measures. The classic model for a cost-effective solution is the mass vaccination campaign, but beyond that model lies notions and practices grafted to an image of prevention, but often lacking a sound conceptual basis. He argued that mass prevention programs should not be implemented without sound groundwork. Without this the true value of prevention will be undersold and exploited for ideological motives.

A further impetus for undertaking research was provided earlier by Gittlesohn (1976) who considered the same reservations were as true for technological innovation as mass prevention measures. In particular, he noted that the introduction and extension of new technologies with incomplete assessment was a constant and growing concern and that inadequate attention was given in the United States to the use of epidemiology as a tool in health service planning and monitoring. Measurement of service utilisation, resource allocation and outcome

measurement revealed wide variations between neighbouring communities that could not be correlated to underlying disease incidence and prevalence. This increased the value of epidemiological research to measure and evaluate health outcomes for given populations versus resource input. This information is particularly valuable to planners and administrators keen to implement 'evidence-based practice' and 'best practice'. Outliers will be detected and, in a financial sense, the use of DRG's internationally and in Australia is seen as a way of evaluating the range and cost of health activities against benchmarks.

A National Health Policy was promulgated in Australia in 1994 to reduce morbidity and mortality through health education, prevention, diagnosis, early intervention, treatment, rehabilitation and research. The National Health Policy envisaged that the health status of Australians could be enhanced by improving accessibility to services, and allocating resources for activities that provide best outcomes. Two of the fundamental measures to drive this change process were the development of information systems to support an outcomes approach and resource allocation that was based on efficiency and effectiveness. Significantly, it was noted that while there were rudimentary systems to collect epidemiological information, including research data on the first three health priority issues, mental health lacked such a base.

The Better Health Outcomes document (1994) contains an enormous amount of information on cancer, cardiovascular disease and injury. Cardiovascular disease, for example, is the leading cause of death in Australia with a death every 10 minutes. The total estimated cost of coronary heart disease in 1989-90 was \$1,193 million, of which \$474 million was devoted to health care and \$719 million lost through sick leave and foregone earnings. The estimated direct and indirect cost of all cardiovascular disease was \$3.4 billion. Clearly, there are enormous potential economic benefits associated with prevention and early intervention approaches.

Epidemiological and economic corollaries can be made for cancer and injury and provides a clear justification for activities aimed at reducing the human and financial cost of these diseases. Australia's Health (1994) noted that the health care system in Australia was pluralistic, complex and loosely organised. The report stated that it was only in recent years that governments had become interested in health promotion. A similar situation existed in regard to the measurement of health and the critical evaluation of health services in terms of clinical outcomes, efficiency and effectiveness. The marriage of epidemiologists, health economists and planners has increasingly challenged conventional thinking and practices. Whilst expenditure statistics can assess the volume and proportion of economic resources allocated to the production and consumption of the range of health services, they cannot demonstrate changes in health status as a consequence. The power from

combining major disciplines is significant and increasingly will be utilised to guide allocation and evaluate the results against agreed industry benchmarks.

Rubin (1996) identified four major population determinants of health. These were demography, socioeconomic status, health-related behaviours and the environment. Within each was a range of sub-categories. In socioeconomic status, for example, was included income, level of education, and employment. Gender differences are increasingly recognised as significant in disease causation. Sargent (1994) noted that some health complaints reflect the type of work that women undertake in office, hospital, factory and home-dermatitis, migraine, RSI, fatigue, etc. Disorders are more frequent in married women with children, particularly in the working class, suggesting that the double work burden of women and the monotony of domestic work play an important role. Unemployment is also a significant factor, particularly if the woman has no option but to work due to long-term unemployment of her partner.

Rawson (1994) believed epidemiology has a pivotal role in planning, implementation and evaluation of health services. He identified the following as the key functions:

- formulation of health policy
- health problem identification and analysis
- determination of priorities for program development

- allocation of available resources (money, manpower, materials)
- planning of health promotion and disease control programs;
- monitoring of health status
- quality and quantity control
- evaluation of health outcomes

Examples of these may be found throughout the health industry as increasingly better information is provided to management. Examples at hospital level include the provision of information on communicable diseases, post-operative infection rates, rates of trauma presenting to emergency departments, medication side effects etc. In recent years, hospitals have been required through quality improvement programs to show evidence not only of the collection of this information but how it informs the quality improvement process. The Australian Council on Healthcare Standards has produced a set of 'clinical indicators' which are routinely used to guide the delivery and assessment of care. This information is routinely collected, analysed and feedback given to clinical staff to assist in improving practice or maintaining standards. Unfortunately, similar clinical indicators have yet to be developed for community mental health care.

Epidemiology highlights and prioritises areas for attention. White and Henderson (1976) recognised this when they observed that attention must be directed to the paramount health needs of communities and populations. Epidemiological concepts



and methods are applied as much to those who need care and do not seek it as to those who are cared for. In this respect, epidemiology provides a set of ideas and methods for evaluating the clinical outcomes of medical intervention, the effectiveness of health care organisations, institutions and manpower, and the efficiency with which these function for individuals and populations.

## THE WAY AHEAD

The International Epidemiological Association has sponsored regular conferences aimed at the use of epidemiology in health service planning, administration and evaluation. White and Henderson (1975) noted that health decision making can be better illuminated and choices more fully informed through the use of epidemiological methods. This has been translated into the practical application of epidemiological principles for health services planning, delivery and evaluation both in the United States and other parts of the world. Importantly, it has also influenced the manner in which clinicians and other health industry professionals are trained with greater emphasis being placed on objective assessment. Most undergraduate training programs and many postgraduate courses contain units on epidemiology. This influence has been evident at two levels - epidemiologists and clinicians have become acutely aware of the issue of resource scarcity and the associated requirement to prioritise. Secondly, health planners and administrators have developed an appreciation of the potential contributions from epidemiology. This is vital given the need to ensure the greatest return possible for each health dollar spent and the need for 'rationing' of health services according to agreed costs and benefits.

It would be unlikely today that new technologies and health interventions would be introduced without adequate description of need, assessed benefits (outcomes) and

associated costs. The time when 'a good idea' would be funded has gone. The National Health and Medical Research Council in Australia carries out rigorous assessment prior to recommending new or innovative technologies and interventions. Even when the various assessment and approval levels have been met it may be many years before government will approve its introduction, usually for economic reasons.

Epidemiological methods are also increasingly employed in policy making, priority setting at the health service level. Rawson (1994) noted that to obtain maximum benefit from epidemiology it is necessary to know what information is required, and for what purpose. This ensures the focus remains clearly on meeting the priorities of the organisation both in the short and longer term. Rubin (1996) stated that the publication of annual reports on the health status of the NSW population ensured the emphasis was given to priority population groups. The reports also acted as a stimulus to the improvement of processes and systems for gathering health information which inevitably would ensure a greater coverage of health status and health outcome indicators. The latter is particularly important given the current thrust within the public health system to set goals and targets for health improvement.

Epidemiology should underpin public health practice by systematically identifying, describing and measuring the distribution and determinants of disease among populations, and providing ongoing methods for evaluating the outcomes of targeted

and frequently expensive interventions. These may range from immunisation programs to community education and prescribing practices for treatment of medical conditions.

As noted by Lawson (1991) 'the new public health' and epidemiology are complementary in facilitating a better balance between resource allocation for treatment and resources allocated to prevention, early intervention and disability reduction.

He argued that the availability of new information about the causation of chronic disease and implementation of best evidence-based approaches had led to a reduction in the incidence of virtually all forms of death and morbidity in Australia.

Epidemiological studies continue to demonstrate conclusively the special requirements of disadvantaged members of the community, eg, the low health status of Aboriginals and ethnic groups and among persons of low economic status.

Undoubtedly this has influenced health economic policy, which is based on 'equity and fairness' with a progressive reallocation of resources from health areas of high funding to those of low funding. This is not necessarily a popular process, nor does it necessarily mean a better mix and balance between prevention, early intervention, treatment and rehabilitation services. Health Areas comprise

different populations with different service needs. As population profiling improves, so will the needs emerge more clearly. This is, however, a complex issue that will be resolved as information becomes available on the health status of the particular population and the outcomes of specific prevention and treatment programs.

# CHAPTER 1

## SUMMARY OF FINDINGS

Epidemiology as a science grew from 'germ theory' and the need to combat the great infectious diseases epidemics of the 18<sup>th</sup> and 19<sup>th</sup> century. Its base has been expanded to incorporate contributions from a wide range of other disciplines concerned with understanding the causes, distribution, frequency, treatment and outcomes of a broad range of illnesses, both acute and chronic. Epidemiology underpins and informs almost all public health activities, providing highly reliable data.

Ryle (1943) recognised that there also existed a non-infectious diseases epidemiology related to social and occupational conditions - a social epidemiology.

Morris (1964) has been called the 'father of social medicine' and formulated the seven potential uses of epidemiology which are widely applied internationally in formulating public health policy and in planning, priority setting, resource allocation and evaluation of health services. While others have expanded on these uses they remain as pertinent as ever.

Hertel (1985) concluded that in the United States epidemiology had established a role not only in looking for causes of disease and measurement but also in assessing the impact of interventions.

Lawson (1991) noted that the new public health and epidemiology are complimentary in establishing the correct balance for resource allocation to prevention and treatment services, including rehabilitation.

In Australia the National Health Policy (1994) concluded that there was a serious absence of epidemiological information concerning the causes, incidence, prevalence and level of disability associated with mental illness. Furthermore there were no standardised state and national information systems in place to collect reliable baseline data.

Rubin (1996), the Chief Health Officer of New South Wales drew attention to the failure of his own department to provide even basic epidemiological information to quantify clinical needs and assist in planning of services for mentally ill people. This was of particular concern given that mental illness was regarded as one of the most serious health problems facing the country.

## CONCLUSION

The extension of the research base of epidemiology has placed it within a wider context for disease prevention, early identification, treatment and rehabilitation. It is from this broad public health framework that it has provided and will continue to provide significant contributions to health service development. It is essential that epidemiological research and decision making systems are of a high quality, particularly when priority setting and decision making concerning resource allocation is involved. The recognition by the Australian Health Ministers Forum (1994) of the significance of the contribution of epidemiology to health service development at a national and international level is indicative of where the emphasis will be placed in the future.



## CHAPTER 2

An overview of psychiatric epidemiology in Australia and internationally, including:

- its contribution to a better understanding of the multi-factorial causes of mental illness.
- the strengths and weaknesses of an epidemiological approach when applied to standardising data collection and evaluating treatment systems in psychiatry.
- a review of epidemiological studies of significance.

## INTRODUCTION

To understand the current position of psychiatric epidemiology it is worth considering the factors in its evolution that have posed significant challenges for mental health service planning and development in Australia and internationally. Epidemiologists study the occurrence of disease within populations. In psychiatry, this presumes that 'cases' of mental illness can be clearly identified, have a known incidence, prevalence, course and outcome, with a prescribed set of treatments of known effectiveness. It also presumes that information can be collected, coded and categorised with scientific accuracy across populations and that the skills exist within the health community to carry out these functions. To link clinical priority setting to resource allocation and outcome evaluation it is essential that uniformity in data collection exists. A major goal for mental health clinicians and epidemiologists for the last 20 years has been to increase the reliability of information collected about the populations treated. Benefits include the ability to accurately estimate treated incidence and prevalence, and determine which approaches offer the most potential for the treatment and rehabilitation of the mentally ill. A public health model requires ongoing follow-up which is also valuable in eliciting the stages of recovery including restoration of normal function.

Simultaneously research has been conducted into the causes of mental illness. This is a difficult process because of the variety of theories concerning its aetiology.

It is significant that current approaches embrace a biopsychosocial paradigm for causation, treatment and rehabilitation. This has facilitated the contribution of neuropsychiatrists, geneticists, biochemists, psychiatrists, psychologists, sociologists, anthropologists and social scientists to an understanding of causation and treatment. While there has not been the revolutionary breakthroughs seen in some areas of general medicine, there have nevertheless been significant advances. Current theory embraces both a developmental and integrative model on the aetiology and course of psychopathology.

Armstrong (1992) noted that while epidemiology arose in public health it now belonged to the whole of the health system. Both public health services provision and health administration are connected by their dependence on epidemiology. Much of the information necessary for the formulation of health policy is obtained by epidemiological methods. Specifically Armstrong viewed health services planning and program development as being dependent on the relationship between services and the population served. Subsequently the delivery of programs in a manner which optimises the use of health services depends on the ability to respond to changes in the health services environment. This in turn requires continuous surveillance and evaluation of health programs' performance against their stated objectives. Armstrong noted that the phenomena of interest in health services research were not so much disease and disability but rather what services were provided and how effective they were.

Weiss (1986) stated that epidemiology allowed the study of variation in the outcome of illness, and the reasons for that variation, including the characterisation of the patient or the care that was responsible for the differences in outcome. Epidemiological methods were vital to this process of evaluation. This was supported by Holland et al (1997) who concluded that there was a growing recognition of the important contribution that epidemiology and its methods can make to the planning and management of health services and to the improvement of health care in general. The central issue was how this recognition was translated to shape health services delivery systems and maximise clinical outcomes.

## EPIDEMIOLOGY AND PSYCHIATRY

Andrews (1997) summarised the contributions of epidemiology to psychiatry as identifying and counting disease rates, disability levels, risk factors, responses to treatment and identifying decision making criteria for which services to provide. He noted that epidemiological studies should provide sound information upon which governments can plan their health services. In order for this to occur internationally a primary step is to minimise sources of error by ensuring that criteria used to define cases are the same throughout the world.

Andrews identified a number of special issues for psychiatric epidemiology in respect to estimating disability, exploring multiple risk factors for mental illness and evaluating treatment.

The difficulty in application of epidemiological methods is linked to the evolution of psychiatry and the ways in which mental disorders have been viewed at different times. Watson (1996) argued that psychiatry was a profession with a crisis of identity and in the 1970's was confounded by conflicting approaches and schools of thought which were not generally founded on a solid base of scientific knowledge. There was no objective method of describing clinical findings and no uniform terminology that communicated the same meaning to all, which was best exemplified by the existence of conflicting diagnostic criteria for illnesses such as

schizophrenia between Europe and the United States. From an epidemiological viewpoint, if the dominant medical professional group could not agree on the causes, diagnostic criteria and treatment approaches to mental disorders, how could accurate assessment and measurement occur? Similarly, could patterns of mental illness in the community be detected if there was no international agreement on what was a 'case?' Treatment interventions seek to reduce prevalence by early detection to reverse the symptoms and reduce the likelihood of relapse. This assumes agreed definitions for disease classification. If there are no effective interventions, early case identification only serves to increase the prevalence count of a disorder that will then have lengthy duration because it is untreatable.

Michels and Mazaruk (1993) reiterated this viewpoint and observed that theories of causation and treatment had shifted in emphasis from the mind to the brain and psychiatry had moved from a model of psychiatric disorders based on maladaptive psychological processes to one based on medical disorders with peripheral measures of neurotransmitters to integrated studies that considered molecular, cellular, neural and behavioural variables. This change in emphasis has led to the vigorous pursuit of diagnostic systems that have greater precision, reliability and validity, and the delineation of genetic, neurodevelopmental, chemical, immunologic, endocrinologic and electrophysiologic aspects of specific disorders. Significantly, while the biological basis of psychiatry has been more firmly established than ever before the research explosion has raised more questions than answers. Many of the

most significant research findings have yet to be confirmed and few have been applied to clinical practice. Despite the strong movement towards biological psychiatry, psychological methods of explaining mental processes continue to provide a significant basis for patient care.

Within the history of psychiatry there is a discernible tendency to move through stages in which a particular theme predominates. Howells (1975) stated that there were five definable eras in psychiatry with dominant themes which have progressed and regressed in cyclical patterns. It is worth considering these as a starting point for understanding the relationship of psychiatry and epidemiology.

The first of the five eras, the **primitive**, was associated with supernatural forces, spiritual influences, myths and magic. Treatment practices were simple, unsystematised and irrational with heavy emphasis on suggestion. The second era, the **rational** was based on the holistic integration of somatic and psychic factors. Ancient Egyptian, Greek, Indian and Arabic medicine were examples. Healers had theories of personality development and emotional states and linked these with physical illness. In this era, the Greeks developed elaborate milieu therapy, and group therapy was practised by the Mayan, Aztec and Inca civilisations. Occupational therapy was emphasised by the Egyptians and music therapy by the

Greeks. Shock therapy was employed by Largus in 46 AD when he used the shock of electric eels to treat intractable headaches.

Howells classified the third era as the **religious**, and based on the doctrines of Christians, Moslems, and Buddhists. Humanitarianism led to care of the weak and the poor as religious movements inspired by saints created religious houses and monasteries, which were followed by general and mental hospitals. During this period the mentally ill were mistaken for heretics, and demon possession and witchcraft were still considered in some cultures to be responsible for mental illness. The fourth, or **somatic** era was characterised by development of anatomy and treatment of physical illness. The emphasis was on general medicine and the mentally ill were segregated into large mental asylums. The mental illness of King George III necessitated greater interest from doctors, but a two-tier system remained with clear segregation and isolation of the mentally ill from the community and mainstream medicine. There was little interest in the psychological causes of illness and mainly physical treatments were employed.

Howells identified the last era as **harmonic**, occurring within the first half of the 20th Century. There was a renewed interest in the psyche but speculative theories held sway with a lack of integration between soma and psyche. Psychiatry remained split from the mainstream of medicine and treatment remained focussed on institutional care with little emphasis on community psychiatry. Landmarks in



psychiatry have been therefore more social than scientific. During the last thirty years a growing interest in human rights and civil liberties has seen deinstitutionalisation dominate approaches as the large psychiatric hospitals have been gradually wound down.

Howells observed that the most significant factor controlling the current pattern of practice is economic rather than any form of needs-based approach to treatment. A debate rages within psychiatry on the notions of evidence-based practice or best practice. Psychiatry and epidemiology must not only recognise what works, but how well, for whom and at what cost. There is an onus on mental health professionals to define their practice and outcomes. This is a dilemma due to the often competing approaches between and within the professions. Currently it is not unusual to speak of mental disorders having a psychological, neurological, biochemical, endocrinal or immunologic epidemiology with associated multi-modal approaches to treatment.

Bebbington (1997) considered epidemiology as a science central to psychiatry as it has advanced the clarity of thought on psychiatric disorder. The keystone of psychiatric epidemiology is to define 'cases' of disorder which implies an imposition of categories - an essentially medical approach. The 1970's and 1980's witnessed development of the first case-defining technologies through assessment of symptoms linked to operationalised classification systems such as the Present

State Examination developed by Wing et al (1974) and the Diagnostic Interview Schedule, Robins et al (1985).

Tansella et al (1997) noted the growing emphasis in extending the use of standardised instruments in mental health service research for therapeutic, planning, and political purposes. Information generated from these cases defining technologies can be used to generate changes in treatment practices and patterns. From this perspective, great power is attached to the data collected which is given the aura of scientific respectability. Against this backdrop of positivist methodologies, Bebbington (1997) noted that social epidemiology had an important part to play in determining the impact of social variables on the origin, concomitants and treatment outcome of mental disorders. He added that, for some, the term social psychiatry denoted a commitment to a school with less solid scientific credentials. Importantly, while the 1990's was a period in which biological psychiatry gained an ascendance, it was also evident that a comprehensive aetiological and treatment approach must incorporate a range of views.

Bebbington observed that not all social studies in psychiatry are aetiological as there is an imperative to study the social concomitants of psychiatric disorders. Biological treatments must, for example, be administered within overall management processes that take account of social influences. These include where the treatments are to occur, the cost of administration, the expectations and

perceptions of the consumer and community, civil, legal and ethical considerations. Tansella et al (1997) also noted that evaluation of services requires the measurement of a wide array of social, clinical and economic variables. This allows more accurate conclusions to be drawn concerning the range of outcomes, their financial and social implications.

## THE POTENTIAL CONTRIBUTION OF JEREMY MORRIS TO PSYCHIATRY

Henderson (1995) outlined the present state of psychiatric epidemiology with specific reference to the uses of epidemiology identified by Morris (1964). Henderson identified a number of distinguishing features of psychiatric epidemiology. As noted, controversy has raged over the accuracy of psychiatric diagnosis and the best ways to measure symptoms. As a science, epidemiology seeks high levels of precision in the recording of information about populations. There has not been a single universally accepted nosology for psychiatry with variations between the American classification system (the Diagnostic and Statistical Manual) and the European system (the International Classification of Diseases). Sartorius (1996) noted that the World Health Organisation has gradually produced a number of instruments to be used in conjunction with classification systems for the purpose of standardising international research. Examples include the Composite International Diagnostic Interview (CIDI) a standardised instrument to be used for the assessment of mental disorders according to the definitions of the ICD-10. A version of CIDI that complements DSM-IV has also been produced. Sartorius noted that the CIDI was to be used in epidemiological studies of mental disorders in general populations and was aimed at assessing the clinical significance and psychiatric relevance of reported phenomena. These 'reported phenomena' are symptoms subjective experiences of illness. This is a distinguishing feature of psychiatric epidemiology. Unlike physical medicine there are few signs of mental

disorder and clinicians are dependent entirely upon evidence elicited from the patient's experience and other information that may be gathered concerning reported behaviour. Significantly, Henderson (1996) noted that the primary classification systems are derived from treated groups and do not necessarily reflect morbidity in the general population. The level of untreated mental illness may also be very high and uncategorised.

While the seven uses of psychiatric epidemiology identified by Morris (1964) have direct relevance to epidemiology there are a number of distinguishing features when applied to psychiatry:

- they depend on a nosology that may lack validity
- they depend largely on subjective symptoms for data
- the morbidity it deals with is really a continuum and not a dichotomy of cases
- measurement of morbidity using scales or standardised interviews is open to error
- unbiased assessment of environmental exposure is technically challenging

It is worth broadly considering how some of Morris' uses of epidemiology can be applied within psychiatry given these features.

## **The Study of the Health of Communities and the Rise and Fall of Diseases in the Population**

Because of the absence of an agreed nosology it has been difficult to estimate with accuracy the mental health status of the population internationally, let alone the rise and fall of specific psychiatric diseases within the community. Wing (1996) noted that the central result of a United States-United Kingdom study in 1972 was that the team of research scientists diagnosed far fewer schizophrenic disorders in the United Kingdom than in the United States. This indicated that the definitional boundaries of the disorder at that time were drawn differently.

Despite this, significant epidemiological studies and findings included those of Klerman (1988) that there may have been a true increase in the incidence of depressive disorders in recent decades; Hafner (1993) that schizophrenia has an average onset five years later in women than in men; Murray et al (1992) that one risk factor for schizophrenia may be maternal influenza in the middle trimester; Der et al (1995) that schizophrenia may be becoming less severe and possibly lower in incidence. A major genetic study by Kendler et al (1993) set out to consider simultaneously the contribution of genetic, personality and environmental risk

factors for major depression. The study found that the strongest predictors were stressful life events, genetic factors, and a previous history of depression and neuroticism. Henderson (1995) noted that the integration of psychosocial and biological variables in this work was impressive.

The central point, however, is that it is notoriously difficult to measure the mental health of the community. As Michels and Mazaruk (1993) reiterated, psychiatric illness is both under-diagnosed and under-treated, and of all people considered mentally ill an estimated 20 - 30 percent receive no treatment at all. They observed that even after presenting for treatment many mentally ill patients are not recognised as having a disorder and less than 20 percent receive care in specialised mental health settings.

### **Epidemiology used to describe chronic mental illness and improve service functioning**

Internationally great attention has and continues to be given to identification of the causes of mental illness, its distribution within the community and the potential opportunities for prevention. Morris (1964) principles are wider than this focus. Specifically he also detailed the opportunities for studying treated populations, the severity of diseases and changes in their character. Morris saw value in being able to complete the clinical picture of chronic disease and describe its natural history

because of the enormous cost to the community of conditions such as arthritis, diabetes, and end airways disease. Some forms of mental illness fall into this category. He also saw the value of epidemiology in studying the working of health services with a view to their improvement and the clear linkage between health service planning, resource allocation and setting of clinical priorities.

Epidemiology straddles the fields of prevention, early diagnosis, treatment and rehabilitation. It is against this backdrop that a number of questions must be asked:

- what information is routinely collected internationally concerning treated populations?
- how is this information collated and analysed to inform clinicians, planners and epidemiologists?
- is the information collection standardised to ensure consistency?
- in what ways is it used?
- what are the gaps in information collection systems?



In Australia, the only state that routinely publishes a report on the mental health status of the population is New South Wales. This has occurred annually since 1996 as part of the report of the Chief Health Officer of the Department of Health. The information published is limited to data available from the Inpatient Statistical Collection which describes the number of patients admitted to public hospitals with a diagnosis of mental illness. This refers to admissions by principal diagnosis and does not identify patients with a secondary diagnosis of mental illness or patients who may have a mental illness but are admitted under a diagnosis of physical illness such as investigation of weight loss or palpitations. The report contains no information on average length of stay by diagnostic related group. It does not routinely identify readmissions, methods of treatment or clinical outcomes. Nor does it report the number of patients seen by community based mental health services or cared for by non-government organisations. Rubin (1996) acknowledged that while hospital care is only part of a range of services provided by the NSW Health Department it is the only form of service routinely monitored and reported, albeit in a limited manner.

The inadequacy of reporting was identified in the Fourth Biennial Report of the Australian Institute of Health and Welfare (1994). Mental health was omitted from this report due to a lack of epidemiological data. It was noted that there was no data on the incidence of mental disorders or on the welfare of mentally ill people in the community. Furthermore, data on the use of mental health services was

sparse. Due to these factors it was impossible to generate reliable information on the true cost of mental illness to the community. This included housing, employment and income support.

In an effort to address these deficiencies the National Mental Health Strategy (1992) required that each state report on annual spending. The intent was to obtain a picture of expenditure and track the utilisation of new funds being injected into states and territories to address deficiencies. The National strategy recognised that it was not sufficient to simply monitor expenditure alone and The National Mental Health Report (1995) noted that a number of states were slowly moving to program assessment based on outcome measurement. The published goals of the report are broad and relate mainly to setting directions in accordance with agreed best practice, defining the priorities for action, establishing the complementary roles of various levels of government and establishing financial arrangements to achieve these directions. Each year a progress report is provided on implementation.

Woolridge (1996) stated that the overall National Strategy objectives were aimed at ensuring that people with a mental illness were supported in the community with an appropriate standard and mix of services and that people requiring acute or extended care have access to the support they need. The priority in the allocation

of resources were people with serious mental illness who, because of the nature of their condition, required ongoing and at times intensive treatment.

Similar objectives have been set in the United Kingdom and the United States. From an epidemiological viewpoint this should facilitate Morris' (1964) objectives of being able to complete the picture of chronic illness and reorganising mental health services to ensure they are meeting the needs of sufferers of mental illness as far as is possible. In Australia, Woolridge (1996) viewed this as being achieved by the description and adoption of best evidence-based practice. Mental health services would be required to implement treatment and rehabilitation practices that are considered by the health industry to provide the best outcomes for consumers. This presumed that the industry knows what is best practice and mental health professionals are trained adequately in implementation. The need to clearly establish guidelines in this area was also recognised by Raphael (1997). The National Mental Health Strategy objectives aim to create an environment for change, but it is up to individual state governments to ensure that the respective mental health services actually identify and employ best evidence approaches uniformly.

It is a further step to establishing a monitoring system that routinely reports on outputs and outcomes in mental health services. It is one thing to establish a treatment system and another to evaluate how that service is implementing best practice in a manner that meets the specific needs and requirements of the

consumers. The linkage of resource allocation to evaluation and measurement as part of an overall strategy is yet another step, but one that is vital in establishing the needs of treated populations and charting the course of chronic mental illness. Given the limited scope of Rubin's (1996) report and the absence of Health Department reports from other states and territories how can this be achieved? In New South Wales the only mental health report that is tabled in State Parliament is aimed at accounting for where mental health funding was spent rather than how and with what effect. Given this situation it is difficult to envisage how national treated incidence and treated prevalence data will be obtained, let alone a consolidated picture on outcomes. Clearly there needs to be agreement on a set of minimum reporting standards for each State and Territory that goes beyond the broad requirements of the National Mental Health Strategy. This is being addressed in part through the National Mental Health Information Development Project (1998) which imposes both standards, systems and reporting frameworks on the states.

## EVIDENCE-BASED PURCHASING - LINKING RESOURCE ALLOCATION TO OUTPUTS AND OUTCOMES IN MENTAL HEALTH

The United Kingdom has taken the initiative in the National Health Service of attempting to link funding to outputs and outcomes. The former relate to unitary measures such as the purchasing of bed days in acute psychiatric units and quantifying community follow-up of consumers. Outcome measurement remains in its infancy, although standardisation of the use of the Health of the Nation Outcomes Scale has occurred.

NHS reports are not consolidated to provide an overall national picture of supply and demand for services. If specific issues require a detailed review the process is to commission a 'white paper,' usually prepared by a senior bureaucrat and a select advisory committee. The preparation of these 'white papers' is hampered by the unavailability of accurate consolidated information. Marks (1996) recognised this deficiency and that current practice stresses both evidence-based care and value for money, which requires balancing benefit against cost. It is essential to know both the numerator (benefit) and the denominator (cost), or how much and how many patients are benefiting from the treatment and what is the treatment costing. He stressed that although the efficacy of some treatments is known under the special conditions of controlled trials, the same results may not occur in everyday practice during which patients' improvement is rarely rated.

For this reason, great care must be taken in implementing new treatment practices with continuous evaluation of cost and outcomes.

Within a managed care environment such as the NHS it is becoming essential to show results or the purchasers of services will look elsewhere. Marks observed that cost issues, demographic changes, patient demands and expectations, and potential for new services are all factors that are forcing national, regional and local health administrations to question and review delivery systems. New computerised information systems such as Clinical Outcomes Resource Management (CORM) developed by Marks attempted to bridge the gap between health economics and evaluation of psychiatric care. CORM allows clinician and consumer rating of care outcomes to occur simultaneously. This provides outcome data from the perspective of both parties. Information can be aggregated to provide output and outcome data for individual units and for an entire treatment system, all of which can be costed.

This approach is supported in principle by Leeder (1992) who stressed the need to study large groups of patients in order to amass enough data to detect differences in outcome among disparate groups. Individuals within groups may be at different stages in the natural histories of their illness and may be receiving different forms of intervention in different environments. He noted that the cost of health care is an important part of the equation and increasing interest in the assessment of outcomes has led to the application of quantitative skills in clinical settings. Mental

health has lagged behind in this regard. The availability of data that is uniformly collected will provide valuable insights into the effectiveness of interventions from the clinician and consumers perspective.

## THE BURDEN OF MENTAL ILLNESS

From an epidemiological perspective, the stakes are not small. Sartorius (1996) at the World Congress on Psychiatry and Epidemiology estimated that worldwide there are at least 400 million people who need mental health care and that one third of all disability is due to mental and neurological disorders. He noted that in Europe alone 140,000 people die of suicide each year and that no less than 20 percent of all chronic illness is co-morbid with mental disorders. While mental illness is growing in absolute and relative terms, the process of making assessments and reaching a diagnosis is easier than ever before. This 'should' ensure earlier detection, treatment and improved outcomes.

Sartorius identified four paradoxes confronting psychiatry worldwide:

### **The Paradox of Care Provision**

Treatment is demanded, effective and affordable and rehabilitation can be effective for many chronically ill or impaired patients. Yet in most countries of the world less than one person in a hundred of those who need care are 'adequately' treated and sufferers remain disabled and stigmatised. Sartorius observed that mental illness remains a serious public health problem for which there are remedies that are not reaching the community in a sustainable and meaningful way.



Bebbington (1997) shared this view and considered psychiatric epidemiology as a cornerstone for the development of treatment and rehabilitation systems. To achieve an international approach it is necessary to obtain consensus on minimum standards of diagnosis, treatment and rehabilitation. Cross-disciplinary agreement on what constitutes international best-practice is a requirement for reviewing preparatory undergraduate and post graduate training programs for clinicians who must use practices of known effectiveness if outcomes are to be maximised.

### **The Paradox of Development Programs**

Sartorius (1996) noted that mental functioning is a determining factor for the success of the human species. Participation in society's development depends on motivation and emotional stability. It is paradoxical therefore that international community developmental programs in advanced and underdeveloped countries do not include mental health as one of their goals. He noted that indicators of mental health are rarely or never used to evaluate society's progress. Australia can claim to be a leader in this regard as the Better Health Outcomes Program (1992) recognises the need to address the issue of mental illness in the community. As part of national development programs each state and territory is required to implement programs aimed at prevention, early intervention and best practice treatments. The National Mental Health Policy and Strategy are central to this

policy. In effect this is a golden opportunity to advance mental health care backed at a Federal level by clearly articulated policies and funding.

### **The Paradox of Administrative Structure**

Sartorius (1996) stated that protection from abuse and the proper treatment of mental disorders have been recognised as human rights by the United Nations. Consequently, there are insistent demands to change the legislation concerning the care of mentally ill in many countries. He considered that improvement in mental health care also depends on administrative rearrangements as a significant amount of health care resources are poorly utilised. Minimal attention is given to ensuring high quality evidence-based administration of mental health services. In other words, the resources are poorly utilised, often leaving a burden on families and non-government organisations. Added to this, legal provisions that protect civil and human rights are, in many circumstances, non-existent, obsolete or disruptive. The priority given to legislative and administrative reform must be lifted to ensure that services are not only run efficiently but in a manner that meets the assessed needs of the population. Administration in this context is at several levels - the level of government charged with the administration of scarce resources, national and state health authorities and locality based management. Epidemiological studies can be used to inform these reforms.

## The Paradox of the Relationship with Medicine

Sartorius (1996) noted that a vast proportion of people with mental illness seek help in health services other than specialist psychiatric services. This has been corroborated by a number of studies including Solomon et al (1993) who estimated that in Australia up to 92,000 people with a serious mental illness consult general practitioners every year. They further estimated that up to 800,000 people with other mental health problems consult general practitioners. Approximately 236,000 Australians with a serious mental illness receive no treatment from public or private health services. This raises several important questions regarding the accessibility of services. Sartorius maintained that despite increasing investments dissatisfaction from staff and the population was increasing and burn-out among professional staff is becoming an epidemic. He viewed medicine as becoming increasingly dehumanised, and psychiatry and the behavioural sciences remaining distant from mainstream medicine. Against this backdrop of uncertainty, epidemiology has an important role to play in evaluating service outcomes and setting priorities for resource allocation.

## **LIMITATIONS TO AN EPIDEMIOLOGICALLY DERIVED EVIDENCE-BASED APPROACH**

The drive towards empiricism has its genesis in positivist philosophies. It is unrealistic to believe that clinical outcomes in psychiatry can ever be fully described by epidemiology alone. There are clear limitations to an evidence-based approach. Shepherd et al (1997) have summarised these:

**Outcomes are generally based on group data, and ignores individual differences**

Evaluative evidence is usually based on group data and 'within group' individual differences may occur. A particular intervention may be ineffective on average but still benefit selected individuals who should be separately identified. An example of this is medication trials where not all consumers will respond as well as others. It is not unusual in these trials to have a wide range of responses. Consumers will also have idiosyncratic reactions. Where a medication has been found to be of low effectiveness, generally there will still be patients who have had a markedly beneficial response to the drug. Similarly, others respond more favourably to behavioural management therapies or cognitive behavioural therapy than others.

**Outcomes are dependent on the local context. Hence poor outcomes may accrue from good services and vice versa**

Health outcomes may be influenced by a number of factors in addition to the quality of services. It is possible to have poor health outcomes even though the care is of a good quality. An example of this is a mental health service that may provide good treatment and rehabilitation services for inpatients but lacks the network of community-based services including housing, vocational support etc. to ensure the person's successful ongoing care once back in the community. Other factors relate to access to services because of lack of public transport, long distances from treatment services etc. Conversely a service may be resource rich, but the resources are maldistributed so entire sections of the population do not obtain adequate care. There may also be a lack of commitment to provision of certain types of services in favour of others, eg, a strong commitment to research but not the provision of rehabilitation services for clients with long-term illnesses. It is important to evaluate both the reasons for good and poor outcomes.

**Absence of evidence does not necessarily mean that an intervention is unimportant or ineffective**

The presence or absence of empirical evidence in relation to a particular therapeutic approach is no guarantee of its importance. An example cited by

Shepherd et al was the evidence in favour of neuroleptic medication in the treatment of symptoms of acute psychosis which is far stronger than the evidence in favour of stable housing. This does not mean, however, that medication should necessarily be given greater priority than looking for somewhere to live. The point is that if the consumer is not settled in reasonably stable accommodation then providing any other kind of service is very difficult. Many practices in mental health services have not been critically evaluated, but perpetuated by historical precedent. In some circumstances this may well be appropriate and there is a potential risk in withdrawing historically well accepted approaches from the argument.

### **Service users and carers may have different priorities to researchers**

Shepherd et al noted that service users and their families have very different priorities regarding service development compared with those of mental health professionals and/or the research community. This is illustrated in a recent study by the Sainsbury Centre in the United Kingdom in which groups of patients, relatives and professionals were asked what they thought was most important for the care of schizophrenia. While the study showed a high level of agreement in relation to the important elements of care, ie, symptom control, housing etc., there was considerable difference in relation to the relative importance attached to each. Service users attached more importance to practical areas such as housing,

money, physical health care, while the professionals tended to focus on issues relating to symptom control, medication, etc.

Importantly, these differences in priorities need to be taken into consideration when planning services. In this regard, it is also important that consumers be asked to self-rate their progress with treatment and rehabilitation. This form of satisfaction testing has been carried out in general health services for many years but is a relatively recent innovation for mental health services. National accreditation guidelines now require services to show ongoing evidence of this form of consultation which is also seen as a way of empowering consumers.

Clearly it is important to look at all available evidence when planning and providing services.

### **Demonstrated effectiveness is no guarantee of deployment in practice**

Shepherd et al highlight there is often a gap between demonstrated effectiveness and clinical practice. A number of factors account for this including a time lag between the development and acceptance of new practices and their packaging for educational and training purposes. There may also be a reluctance to endorse new approaches because of long-standing prejudices. These blockages at a professional level may be resistant to change and often relate to issues of ownership, influence

and autonomy. Another factor relates to the way that services are organised, which links to Sartorius' (1996) point concerning the administration of services. It is not sufficient to convince planners and clinicians of the benefits of new approaches. There must be a commitment from the administration of services to an ongoing reform of the patterns and process of mental health services delivery which encompasses both best practice and community consultation. If the commitment strongly exists at the level of Government and the bureaucracy then interventions of known effectiveness will be implemented. There is in reality an epidemiology of service delivery which may dramatically influence clinical outcomes.



## THE EVOLUTION OF MENTAL HEALTH CARE AND THE IMPLICATIONS FOR EPIDEMIOLOGY

As new trends in treatment and rehabilitation are implemented, epidemiological methods are vital in assessing their effectiveness. Shepherd et al (1997) noted that models of therapeutic care and rehabilitation are changing quite rapidly. In the early 1970's rehabilitation was considered almost as a single step process. Consumers were treated using behavioural techniques - behaviour therapy, modelling, shaping etc. Rehabilitation was about skills training and moving long stay patients outside of hospital. There was no conception that rehabilitation was a way of thinking about psychological problems - more a philosophy than a set of techniques and that it was often ongoing rather than a time-limited procedure. Once rehabilitation was seen as a process and not static or a throughput model it became easier to identify the elements of a working rehabilitation model. From an epidemiological viewpoint this is an important consideration in terms of charting the course of chronic illness with regard to the influence of rehabilitation processes, their cost and implications for future planning and provision of health services.

An example of a new trend is the drive for reduced length of stay of patients in acute psychiatric units in New South Wales. During the 1980's a policy was established to reduce wherever possible the length of stay of patients admitted for stabilisation of an acute episode of illness. This policy was vigorously pursued with the result that Directors of Acute Units (1994) complained of high levels of

readmissions and community-based teams complained of being swamped with referrals. Studies should be conducted to determine the true nature of this trend and the implications for patient care. Another area requiring investigation involves the current NSW policy for detoxification of patients with a substance disorder. Anecdotal evidence suggests that the procedure for detoxification is rarely followed. A number of questions arise - how many patients with co-morbidity require detoxification, where is it carried out, what are the outcomes?

As noted, Morris (1964) emphasised the importance of epidemiological studies in studying the working of health services with a view to improving effectiveness and efficiency. An example in mental health services is a study conducted by Shepherd et al (1997) on the relation between bed use, social deprivation and overall bed availability in acute adult psychiatric units. This study showed that the shortage of beds in acute psychiatric units in the United Kingdom was related both to social deprivation, where there was a non-availability of community and residential options, particularly supported accommodation, and to an overall shortage of acute beds. It also demonstrated that a lack of suitable rehabilitation facilities was an important reason for the new long stay patients being retained in acute psychiatric units. These patients tended to remain longer because they required a higher level of psychiatric supervision than was generally available elsewhere.

Shepherd et al found that developing good community services means refocussing teams, retraining staff and reorganising services to provide 24 hour support. Access was also required to sufficient levels of sheltered and supported housing, yet many of the services surveyed could not supply accurate information about the range and nature of housing provisions in their areas. Similarly, although three quarters of the study sample reported having multidisciplinary Community Mental Health Teams the survey found only three examples of functioning crisis services and the same number of specialist intensive support teams with low caseloads and focusing on the severely disabled long-term patient.

In summary, the study found:

- acute beds were blocked by short stay patients requiring intensive community care
- acute beds were blocked by long stay patients requiring more highly supervised care of the type that used to be provided by psychiatric hospitals
- acute beds were blocked by patients needing secure facilities

- acute beds were blocked by patients with special needs due to brain damage, dual diagnoses, etc.
- community mental health teams lacked basic information on alternative services
- there was a shortage of community teams that focused on severely disabled long-term patients.

This type of study of a treatment system highlights a situation that clinicians have been complaining about for several years, including New South Wales. Its importance lies in the fact that the study was conducted with methodological rigour and a high level of confidence was attached to the findings. Importantly, through the survey it was elicited that a proportion of community mental health teams were failing to provide the services for which they were established. The teams lacked basic information about housing support in their districts, failed to provide 24 hour services and generally lacked the focus required to ensure that community mental health services were provided in an assertive manner. This identified a paramount need for administrative action to refocus the work of these teams in a manner that does not demoralise staff. As noted by Morris (1964) this is an important function of epidemiological studies - to improve the effectiveness and efficiency of services

by reviewing their functioning against agreed service standards. This is in reality a further example of the epidemiology of service delivery.

An important question arises from these studies. Can the findings be generalised to other countries such as Australia and why are studies of service functioning not carried out routinely as a quality improvement measure?

One answer relates to the fact that mental health services is in an evolutionary period. Over the last 20 years mental health treatment services have moved from a predominantly inpatient focused service system to a more community-focused system where traditional methods of organising and administering services have changed dramatically. Impressive work by Stein and Test, (1978) challenged the traditional methods of treating the mentally ill by piloting innovative community models of care. Staff working in new treatment settings require different preparation to prepare them for the challenges they will face and to ensure that the promise of new systems of care are fully realised.

While recognising the importance of the principle of care in the least restrictive environment there is an equally important imperative to study the outcomes of treatment services and systems. Ultimately, while the debate rages about the mix and ratio of inpatient and community services, consumers still require treatment and quality to be maintained. It is quite possible to have good inpatient services and

inefficient community services or vice versa. Simply their is not enough if they are not operating to accepted standards.

## THE CURRENT STATUS OF PSYCHIATRIC EPIDEMIOLOGY

Hendersen (1996) identified the study of the working of mental health services as an important function of epidemiology starting with determination of needs and resources, analysis of services currently in action and their evaluation. The International Journal for Research in Social and Genetic Epidemiology and Mental health services increasingly publishes research of this nature. In practice, this means the publication of a wide range of articles incorporating a range of perspectives. Bebbington (1997) observed that the nature of articles published has changed in accordance with the dominant clinical model. While the Editorial Board has indicated its desire to push forward the scientific infrastructure of psychiatry, it has remained committed to the study of epidemiology. The journal is also intended as an outlet for methodologically-sound research examining the impact of social variables on the concomitants and outcome of mental disorder.

What is lamentable is the absence of extensive research into the functioning of mental health care service systems. It is worth studying the changing nature of treatment and rehabilitation systems with the same priority given to researching the causes of mental illness. Given the number of people at any one time being treated within public mental health systems around the world, it is vital that a clear picture is obtained of service outcomes. Hugh (1997) stated for example that there was no evidence to suggest that services with integrated treatment approaches for

people with a dual diagnosis of mental illness and drug and alcohol abuse were either clinically effective or cost effective. Given the prevalence of this condition, this is an area that requires further research.

The alternative is to continue to treat patients with this diagnosis in acute psychiatric units where they pose enormous clinical challenges.

Research needs to be carried out in New South Wales into the effectiveness of Community Counselling and Community Treatment Orders. There are three perspectives to this - the consumer's, the professional's and the carer's. Are these orders successful in modifying behaviour on a longer term basis?



## EPIDEMIOLOGICAL STUDIES OF INTERNATIONAL SIGNIFICANCE FOR MENTAL HEALTH

Kaplan et al (1994) highlighted the importance of epidemiological studies in the overall evaluation and planning of mental health. The results of such studies are important to define and evaluate strategies, to prevent and control disease and disability. While there has been a growth in the number of epidemiological studies undertaken, Kaplan et al have identified six as being of major significance.

### **Chicago Study**

Faris and Dunham (1934) examined 35,000 admissions to mental hospitals in Chicago and found that admissions for schizophrenia were highest for persons from the city's lowest socioeconomic group. From this they developed a drift hypothesis which maintains that impaired people slide down the social scale because of their illness. The study also helped conceptualise two additional hypotheses about mental illness - The Social Causation Theory that holds that being a member of a low socioeconomic group is significant in causing illness and The Social Selection Theory which hypothesises that having a mental disorder leads to becoming a member of a low socioeconomic group as a secondary phenomenon.

## **Monroe County Study**

Monroe County, New York, established a case register in 1960 of all county residents who have used psychiatric services. The register is maintained by the Rochester School of Medicine. In 1970 the data showed that three percent of county residents had received treatment in mental health care facilities in the county, including the rooms of private practitioners. In addition, the data in the register showed a newly treated incidence rate of less than one percent.

## **Midtown Manhattan Study**

Rennie et al (1962) designed and conducted a survey in 1954 involving 1660 adults sampled from a part of New York City. The study objectives were to determine the effects of demographic, social and personal factors on mental health and illness using a structured interview. The findings were that mental disorders rose as age increased, 81 percent of persons from 20-59 years of age had symptoms that were mild to incapacitating and 23.4 percent of people in that age group were substantially impaired. Socioeconomic status was the single most significant variable affecting mental illness with persons in the low socioeconomic group having six times as many symptoms as those in the high group. There were flaws in the assessment and the analysis of the data from the study, but it did demonstrate that disability from mental health problems was common in the general community.

## **New Haven Study**

Hollingshead et al (1950) studied the relation of social class to the prevalence of treated mental disorders in New Haven, Connecticut. Analysis of the data demonstrated a definite relation between social class and mental disorders with neurosis being more prevalent in persons in the high socioeconomic groups and psychosis being more prevalent in the low socioeconomic groups. Low socioeconomic status, occupational instability, and downward mobility were associated with the highest frequency of psychiatric disability. Another important outcome of this study was the development of a subgrouping of class structure based on education, occupation and income. This classification system has been widely adopted by sociologists and epidemiologists.

## **Stirling County Study**

Leighton et al (1963) conducted this study in a rural area of North Eastern Canada and tested the hypothesis that mental disorders have a higher prevalence in communities that are afflicted by socio-cultural disintegration. The study was carried out in villages, a small town and many isolated farms. The data was recorded using structured interviews by non-clinicians and then rated by a psychiatrist. The survey showed that 57 percent of the persons interviewed had a lifetime prevalence of some form of mental disorder, 24 percent had a noticeable

impairment and 20 percent were in need of psychiatric attention. The evidence demonstrated that women showed more psychiatric disorder than men and that mental disorders increased with age and degree of poverty. Henderson (1997) noted that the characteristics of socio-cultural disintegration were broken homes, few and weak associations, inadequate leadership, few recreational activities, hostile and inadequate communication, secularisation and cultural confusion. He also commented that the study had to cope with the problem of contamination between the dependent and the independent variables, but it was nevertheless an appealing idea the mental health is influenced by attributes of the whole community. The implications of this study for rural Australia are significant given the combined effects of drought, and rural recession over the last decade.

### **NIMH Epidemiologic Catchment Area Survey**

Kaplan et al (1994) identified this study as being of major importance. Compared with previous studies it used better diagnostic tools and more specific criteria to make a diagnosis. The ECA study provided estimates of mental disorders across five different sites in the United States. It also identified what percentage of the population with mental disorders was receiving treatment in private psychiatrists' rooms, public mental health facilities and non-psychiatric settings including medical centres and internists' offices. This study has been succeeded by the National Comorbidity Study. It was conducted on a nationally representative sample of 8098

adults aged 15-54 using the Composite International Diagnostic Interview. It found that nearly 50 percent of respondents had experienced at least one psychiatric disorder in their lifetime and nearly 30 percent had at least one in the previous 12 months, and in the latter group less than 20 percent had received professional treatment. Other findings were that the most common conditions were anxiety disorders with a 12 month prevalence of 17 percent, affective disorders with a 12 month prevalence of 11 percent, and alcohol abuse or dependence at 10 percent. The study also showed high levels of comorbidity. It has been possible using prevalence rates in the five ECA sites to develop a table of Standardised one month, six month and lifetime prevalence rates of DIS/DSM Disorders per 100 persons 18 years and older. The rates are standardised to age, sex, and race distribution.

## **Contemporary Epidemiological Studies**

In recent years a number of epidemiological studies have been undertaken in an effort to accurately describe both the prevalence and incidence of mental disorders, the influence of treatment settings and treatment type and the short and long-term outcomes for patients. Heinze et al (1997) studied the quality of life of patients with paranoid schizophrenia in London and Berlin. The hypotheses tested was that although Berlin patients may rate more highly on objective quality of life measures (better housing, pensions etc.), the subjective quality of life would be similar as patients would judge their quality of life against local expectations.

The study found that the relationship between quality of life and objective quality of life is not straightforward and that when comparing data between different cultures that complex interactions of factors occur that must be taken into account. Subjective perception did not follow the objective situation indicating that there are other factors influencing quality of life.

Martin et al (1996) studied the relationship between subclinical depression and performance at work. Using interview data collected from 265 adults, multiple regression analyses indicated that depressive symptomatology was significantly related to reduced performance at work. According to the data even mildly depressed people performed more poorly in a variety of work roles than persons who were less depressed. Given the prevalence of depression in the community this is a major concern for society as a whole.

Saarento et al (1996) carried out a comparative study on sectorised psychiatry in seven catchment areas of four Nordic countries. Specifically the study focused on the utilisation of psychiatric hospital care relative to the amount and allocation of resources for psychiatric services. The findings demonstrated that utilisation of patient care is determined in part by the supply of available beds. Significantly the availability of highly staffed community services alone did not reduce the use of inpatient services with the exception of day care services which served to reduce the utilisation of inpatient care by psychotic patients. According to the findings of

this study, patterns of clinical practice, integration and co-operation within the specialist psychiatric services, as well as primary care and social services of the catchment area are probably of greater importance than the amount and allocation of psychiatric resources in determining the utilisation of psychiatric inpatient care.

Sullivan et al (1997) carried out a case-control study in the United States investigating the extent to which aberrant behaviours in contrast to more traditional clinical factors (such as symptoms and alcohol abuse) place individuals at increased risk of rehospitalisation. The results demonstrated that behaviours were very powerful predictors of rehospitalisation in a population with schizophrenia, even after controlling for symptom level, number of prior hospitalisations, current living situation and global functioning. Disruptive behaviours such as having a temper tantrum, threatening or actually harming others, doing bizarre things, acting paranoid, and threatening to commit suicide were 27 times more likely to result in rehospitalisation than alcohol abuse.

Paranoid behaviours presented the highest risk for readmission, carrying greater risk than psychiatric symptoms.

## APPLICATION OF RESEARCH FINDINGS TO CLINICAL PRACTICE

Given Morris' (1964) description of the uses of epidemiology it is worth considering how these research findings are translated into clinical policy and practice. Psychiatric epidemiological studies are used to define problems for action, their relative importance and priority and to identify vulnerable groups needing special care. Research findings should be used to guide the planning and development of psychiatric services in a consistent and reasonably systematic manner. Similarly, epidemiological studies should be utilised in assessing how well health services are performing the tasks for which they were established and to improve their effectiveness or efficiency. Finally, further studies need to be undertaken to describe the clinical picture of chronic psychiatric disease and its natural history?

Given the criticism in the Better Health Outcomes report (1994) of the lack of epidemiological information about mental health services in Australia it is apparent that all the uses of epidemiology envisaged by Morris are not yet occurring. The situation is improving, however, with co-operation occurring on both sides of the Atlantic Ocean and agreement occurring on important fundamentals such as cross-coding between ICD-10 and DSM-IV. Regrettably the same progress has not been made in relation to area based clinical information systems development, making it almost impossible at this time to obtain routine aggregated data on mental health services utilisation. The development of national minimum data sets for mental health and feeder systems at state and territory level is vital if this is to be



addressed. Similarly there is a need to objectively review those epidemiological studies being undertaken to assess the potential for influencing the development of best evidence-based practice models. Clearly this is a dynamic process which will help establish clinical priorities and guide educational activities for practitioners.

An example of a study which has had special significance for planning and allocation of resources is Glover et al (1999) which studied the range in prevalence of mental health problems among English health authority areas. It found that among health areas the most morbid have about twice the prevalence of primary care level mental illness of the least morbid.

The planning and resource implications are significant as the study found that the more severe varieties of psychiatric morbidity seem to be more geographically concentrated than the less severe problems, and in devising resource allocation strategies, indicators reflecting all relevant levels of need should be employed.

Fundamentally, this would require further refinement of the English Department of Health's resource allocation mechanism to address the marked differentials in distribution of need.

## CHAPTER 2

### SUMMARY OF FINDINGS

Psychiatry has not benefited from epidemiology to the same extent as other areas of public health. This is due to a number of factors including the absence of standardised international criteria to define cases and measure disability, the existence of multiple risk factors for mental illness and complexities in service evaluation. Consequently Henderson (1995) and Sartorius (1996) observed that it was vital to identify causal associations including the social epidemiology of mental illness. They also noted the growing emphasis on case defining technologies on the world stage in order to assist with the description and measurement of mental illness.

Howells (1975) identified five evolutionary or developmental stages in psychiatry - the primitive, the religious, the somatic and the harmonic. A new stage has been added in the 1990's based on neurointegrative science - the era of the brain. There has been a move away from emphasis purely on maladaptive psychological processes to a model based on brain structure and neurochemistry. While this has focused on causation it in no way reduces the role of epidemiology.

It is apparent that Morris' (1964) uses of epidemiology have not been used to maximum benefit within psychiatry. Increasingly resource allocation is linked to measurement including the evaluation of outputs and outcomes. Epidemiology can provide significant input into identifying clinical priorities and guiding resource allocation and evaluation, thereby influencing the effectiveness of entire treatment systems.

Henderson (1996) has described the important contribution to be made by epidemiology in studying the working of mental health services. Shepherd (1997) and others have done this with some success in the National Health Service and demonstrated how the application of research findings can be successfully applied to reforming clinical practice.

Mental illness is growing in absolute and relative terms, yet several paradoxes exist where care does not reach those most in need in a sustainable way. Sartorius (1996) concluded this was due to the assignment of a low international priority compared to other areas of health care, abuse of human rights and poor planning and administration of resources.

## CONCLUSION

Epidemiological studies in psychiatry have a wider focus than aetiological research. Morris (1994) identified the opportunities for using epidemiological research in assessing the effectiveness of health care systems in defining and meeting community needs.

In psychiatry the application of epidemiological methods has been impeded by the inability to obtain internationally agreed criteria for various types of illness. Psychiatry has been quite unique in this regard. Cancer and cardiovascular disease 'cases' for example are clearly identified and treated based on histopathological findings. This is not so clear-cut in psychiatry, even though progress has been made during the last 20 years with international collaboration and agreement on nosology and treatment approaches.

Morris envisaged that epidemiology had a great role to play in evaluating treatment approaches and system efficiency. It is important therefore that research findings are incorporated into the planning and provision of mental health service treatment systems.

There has never been a more important time to keep abreast of research in order to provide clear directions and guidelines for clinical practice. Processes need to

be put in place to ensure that research findings are considered fully when new services are being developed and current systems reviewed.

## CHAPTER 3

Current and emerging approaches to clinical priority setting, resource allocation and outcome evaluation in New South Wales Mental Health Services and internationally

## INTRODUCTION

Morris (1964) considered one of the major uses of epidemiology was in assessing how well health services were performing with a view to improving their effectiveness and efficiency. This type of evaluation was essential to ensure that resources were allocated in a way that ensured maximum health gain by the identification of conditions with the highest clinical priority and numbers affected. Central to this is outcome evaluation, or the measurement of changes in health status as a consequence of health interventions. Ideally, the allocation of funds should be linked to clinical priority-setting with a rigorous evaluation of the outcomes and outputs. Epidemiology has been at the forefront of this process in physical medicine. Strong partnerships have been formed with the discipline of health economics to not only ensure that funds are allocated on the basis of assessed need, but also to measure the cost of treatment services. During the last 20 years the World Health Organisation has identified disease states for priority attention - cardiovascular disease, cancer, infectious diseases etc. It is possible to quantify the cost of individual treatments on a unitary basis. Statistics can be routinely produced on hospital casemix to establish performance benchmarks between hospitals providing similar levels of service. These benchmarks include average length of stay, cost per treatment episode, and clinical indicators such as rates of cross infection, relapse rates, etc. This drive has been concerned with improving the health outcomes for patients and ensuring the most efficient

utilisation of scarce resources. This is a sensitive balance as purchasers of health services demand greater efficiencies and clinicians strive for more effective treatment methods with optimum outcomes.

In the last decade the language of health economics has expanded to describe a variety of service elements - purchasers, providers, flows, marginal analysis, outliers, health opportunity costs etc. Budgets are developed and allocated on the basis of capitation formulas, socio-demographics and casemix. Public mental health services have lagged behind physical medicine in utilising epidemiological methods to allocate resources, identify clinical priorities and evaluate treatment outcomes for treated population. Notwithstanding the forces of economic rationalism are increasingly being refocussed on mental health and the requirement to "measure" outcomes and outputs is increasing in line with other areas of health service provision. Epidemiology has an important role to play in this regard. If psychiatry is to compete for additional funding and even maintain its current funding base it is essential that service delivery can be evaluated and validated. There is a need to develop a model that identifies clinical priorities, guides resource allocation and facilitates the evaluation of the services provided to consumers. It is essential to identify deficiencies that leave mental health services vulnerable to having its priority reduced within a fund-starved health system.



Governments have been searching for many years for a fairer and more equitable way of allocating resources for public health services. This has been heavily influenced by the question of how much tax-payers' money should be spent on providing health services. Nonetheless there seems to be bipartisan concern within politics that the cost of public health spending could rapidly escalate out of control if the reins of fiscal responsibility are not held tightly. This view of health as a potential 'bottomless pit' has led to heated debate between Commonwealth and State Governments over the grants program with the states continually accusing the former of not providing sufficient funds to meet health needs. The Commonwealth usually responds with accusations of cost-shifting and 'figure-fudging.' As these negotiations cover all sections of the healthcare industry, mental health is not immune, particularly with the Commonwealth providing additional funding to implement the National Mental Health Strategy. Previously, the provision of public mental health services was primarily the responsibility of the states and new Commonwealth money has many conditions attached. One reason for this is the concern of the Commonwealth that the money not be diverted.

The Australian Health Ministers Advisory Conference (1997) agreed to certain building blocks to ensure better integrated and co-ordinated care through the Healthcare Agreements. These included integrated information systems that would allow patients to be identified across health services, linking of records and the development of common reporting standards. Significantly, it was also agreed that

there was a requirement for an output and outcomes focus based on agreed targets and performance measures and risk sharing arrangements. Underwriting these objectives was an agreement that the Commonwealth would explore with the states/territories opportunities for health service reform on a cost-neutral basis. Potential recurrent increases in funding for public health services was remote despite the calls to make greater budget provision due to lower private health insurance rates. This is the national context in which mental health services must compete for its budget share.

## CURRENT FUNDING MODELS IN NSW AND AUSTRALIA

Tobin (1997) observed that in Australia the current methods of funding mental health services are mainly historically derived, based on past patterns and levels of activity and subject to forces such as ease of access, ability to pay, whim of providers and the power of interest and lobby groups. The major focus was on structures such as case management, private practice, numbers of inpatient beds, and staffing levels - none of these allowed distinctions between cure, alleviation, rehabilitation or life-long welfare support. Andrews (1997) identified a need to develop a mechanism to prioritise the delivery of health care and to identify the diagnosis/treatment pairings that offer the greatest health gain per dollar. He noted that only 30 percent of those who met criteria for a mental disorder were being seen by either specialists or general practitioners. The situation of those with severe disorders was better and 60 percent of such patients were being treated but half were being seen by general practitioners. The National Mental Health Report (1995) noted that only 4.7 percent of health expenditure went towards people with mental disorders. This figure did not include treatment of people with drug and alcohol disorders. Many people with mental disorders go untreated. Calman (1994) in reviewing funding of the United Kingdom National Health Service concluded that rationing was inevitable. People could only expect the state to provide shelter, emergency services and primary health care to the sick with discretionary specialist care being restricted to those diagnosis/treatment

pairings which were cost effective ways to achieve health gains. Boyce (1997) identified the spectre of managed care as becoming more and more of a reality for mental health services in Australia with purchasers having more say in what service providers should and should not do with money allocated. Managed care scenarios may be employed within both the public and private sectors. Currently in Australia private psychiatrists receive reimbursement through the Medicare system and there have been recent moves to cap this source.

Psychiatry is increasingly being placed under the health economist's microscope and the challenge is not only to increase funding but to justify the amounts already being spent. Boyce cited the work of Kleinman and Cohen (1997) which concluded that outside of North America and Europe, schizophrenia, dementia and other forms of mental illness are on the rise. Schizophrenia was expected to afflict 24.4 million people in low income societies by the year 2000, representing a 45 percent increase over the number afflicted in 1985. While the epidemiological evidence of need is compelling, mental health services have yet to be able to demonstrate a universally-agreed approach to diagnosis, treatment and rehabilitation that offers maximum health gains for the dollars spent. This realisation is forcing psychiatry into a radical re-think of what it offers. Because the funding mechanisms have shifted to incorporate more players, it is no longer possible to presume that resources will flow in the time-honoured fashion. More is being demanded in terms of a 'business case'. Wilson (1997) also expressed concern at moves by

governments and private funders towards a managed care environment. Proposed changes under the Commonwealth Medicare Benefits Schedule to Items 344 and 346 would have meant that benefits were no longer payable for the treatment of infants when they were seen with their parents. Harding (1997) observed that there was never enough money in anyone's budget resulting in a need to re-design the system to provide the best results for the dollars available.

## **Resource Allocation Formulas**

Most Australian states and territories are moving towards the development of resource allocation formulas as a way of allocating funds to publicly funded health services and clinical programs. In New South Wales the development of these formulas has been based on the principles of ensuring equity and fairness in resource allocation. The New South Wales Department of Health Economic Statement for Health (1996) noted that the Department was embarking on a series of key economic reforms that would ensure that public funding was allocated on the basis of health needs for particular types of health services and the level of required funding. There is an explicit link with epidemiology and the capacity to measure the health status of the community. The intention is to provide Area Health Services with greater control over a budget allocation from which they can establish priorities for health service provision. The Resource Allocation formula targets will not be achieved immediately and there will be winners and losers. Gaps

were identified by the Department of Health between current allocations to Areas and their equity-based share under the formula which would be progressively removed. Importantly, although there would be a redistribution of resources the overall amount of funds available would not be reduced.

The key principles identified in the statement are to ensure better health for people, enable equity of access to comprehensive health services and to improve the quality of services. These complement Morris' (1964) uses for epidemiology. The economic reforms to achieve these principles encompass the following strategies:

- The new Resource Allocation Formula
- A new funding system with service agreements between areas
- The introduction of casemix budgeting as a management tool
- Extension of financial incentives to target key health outcomes
- Ensuring that areas have greater control over their Capital Works programs
- Development of mechanisms to network support services across key boundaries

- Clearer delineation of roles between the Department of Health and Area Health Services

One of the fundamental issues guiding this strategic reform process in New South Wales is the belief that in the past health resources were allocated in a manner that ultimately created a maldistribution of resources between Areas, rural and metropolitan services. This in turn led to Areas with greater or lesser service provision in critical areas such as mental health. In New South Wales budgets were allocated on an historical basis for many years with little consideration given to the issues of socio-demographics, prevalence and incidence of illness. Resource allocation did not adequately take into consideration the growth of the population of the western suburbs of Sydney or shifts in certain sections of the population such as the marked trend for retirees to move to the Central and North Coast of New South Wales. Given that the elderly consume significant levels of health resources it was not unreasonable to increase the allocation of resources to meet assessed needs. Similar examples involve the need for specific resource allocations for Aboriginal health, migrant health and to combat the AIDS epidemic state-wide and in areas of high incidence such as the Eastern Suburbs of Sydney.

The NSW Health Department placed emphasis on the development of funding formulas throughout the 1980's and 1990's. These have been applied to all health programs including mental health. The Resource Allocation Formula attempted to

quantify known influences on the utilisation of health services. It incorporated age/sex adjustments, a need index which reflects Standardised Mortality Ratios, socioeconomic status and rurality. With respect to mental health services the intent is to move towards a need-weighted per capita population approach to funding of services. Additional funding through the National Mental Health Strategy will go to developing new community-based services to correct perceived service inequities.

Within the mental health RDF there are five components:

- (i) state-wide services
- (ii) chronic inpatient services
- (iii) acute inpatient services
- (iv) community mental health services; child & adolescent
- (v) community mental health services; other

The components are identified as service types and the needs index does not identify the major diagnostic categories of the patients that will utilise these services. This is further reflected by the measure of resource requirement which is occupied bed days (psychiatric diagnosis is not easily grouped by the AN-DRG system). It is also evident that there is no standardised form of disability measurement whereby patients are assessed for their rehabilitation needs. This



again is determined by the level of occupied bed days. It is therefore impossible to determine the concise basis for length of stay and whether it is due to high acuity based on level of symptoms or chronicity characterised by long-term disablement. The demarcation point between an acute and chronic inpatient is 35 days which reflects the point at which a patient requires a Commonwealth Acute Care Certificate. The current distribution of expenditure across all components is state-wide services 3.4 percent, chronic mental health services 33.2 percent, acute mental health services 34.8 percent, community mental health services for children 3.0 percent and other 25 percent.

### **Needs Index Mental Health**

A New South Wales Health Department discussion paper (1993) on the Resource Allocation Formula identified a needs index incorporating three parameters each of which were allocated a different weighting. These parameters were selected from a process of model reduction through factor analysis and comprised the parameter of population over 35 who were never married, relative disadvantage and rurality. The parameter over 35 and never married was included after it was found there was a relationship between marital status and psychiatric unit admission rates. A 40 year old unmarried male was six times more likely to be admitted than a married male at the same age. The rurality parameter was added in recognition of the extra expense involved in delivering services in rural areas and the index of

relative disadvantage was obtained from Australian bureau of Statistics data. The state mental health policy framework 'Leading the Way' (1990) identified five socio-economic indexes which influenced the requirement for health services:

### **Index of Disadvantage**

High unemployment rates, large numbers of low income earners, people lacking fluency in English, people who rent rather than own their house.

### **Urban Index of Advantage**

High household incomes, tertiary education and people whose work requires formal training.

### **Rural Index of Advantage**

The same selection of items as the urban index, but takes into account the different characteristics related to rural areas.

## **Economic Resources Index**

Economic indicators of well being including income, rents, house size and number of cars at each house.

## **Education and Occupation Index**

Rankings based on educational background and type of education.

Within the current draft Resource Allocation Formula additional factors have been included for Aboriginal population and people of non-English speaking background. Similarly, an adjustment has been applied to the community component for mental health due to the extra work encountered by community health teams in providing for boarding house and refugee populations.

The Department of Health has also made a commitment to benchmarking and the introduction of best practice approaches. To facilitate this process the Department will expand the benchmarks for mental health services outcomes and output measurement. This will be linked to data collection to measure progress in implementing the National Mental Health Strategy (1992) including quantification of the costs of running various types of services. General hospitals for example have been asked to demonstrate progress towards meeting benchmark costs in

1997-98 and will be responsible for developing strategies to achieve the benchmark costs. Benchmarking will be generally supported through the:

- establishment of an annual hospital and health service cost data collection which focuses on the outputs of care
- development of information tools to analyse and compare costs and activity to assist areas and hospitals to identify areas for improved practice
- publishing of annual departmental report on comparative performance of hospitals against benchmarks
- identification of targets for improved practice
- establishment of asset performance benchmarks in terms of utilisation and cost related to provision of services

Whiteford (1998) noted that in the context of micro-economic reform scarcity of resources meant that decisions in mental health needed to be made as to what services will be provided and to whom. He identified five main areas in which the funders in Australia (the respective governments) were exerting an influence:

- cost per unit of service
- necessity and appropriateness of service
- service and clinical standards
- clinical and population outcomes
- consumer satisfaction

A cost per unit of service could be an occupied bed day or an outpatient occasion of service. Both may be measured against benchmarks which are standardised on a statewide basis. Whiteford further noted that increasingly the emphasis was being placed on the identification and measurement of output units, that is a unit of output of a service rather than a unit of activity which describes a process as opposed to a specific output. Other benchmarks currently being formulated are set against a population figure of 100,000 and include the number of community staff, the number of child and adolescent staff, number of acute inpatient admission beds, the number of long stay/extended care beds. Benchmarks or desired levels for each of these service types have been established and each area will be expected to work towards them.

### **Mental Health Classification and Service Costs Project**

This Commonwealth funded project aims to create a foundation for a costing and classification system and is another form of benchmarking but with a level of

sophistication not hitherto attempted. The intent is to ultimately create a classification system based on the case attributes of patients. Solomon (1995) stated that the system would be used:

- in individual service settings to enhance the technical and clinical performance of psychiatric AN-DRG's and to fund community mental health services and long stay residential services on an activity basis adjusted for casemix
- across service settings and over time to set 'bundled care' payments
- to enhance service integration consistent with the Council of Australian Governments (COAG) reform agenda for people with chronic health conditions

Solomon also identified the need for this work which arises from:

- the high priority given to mental health by Australian Health Ministers
- the limitations of AN-DRG's for mental health, often leading to their exclusion from mainstream acute hospital casemix funding arrangements

- the absence of case classification systems for other key components of mental health services
- the inability of the funding system to reinforce the emerging case management systems for mental health, where a budget holder can receive a bundled payment for a range of services over time, so providing incentives to substitute community-based care for inpatient admissions
- the complexity of mental health, both in the range of services used (acute, residential, community) and the needs of patients (medical, allied health, disability support)
- the low level of casemix development resources allocated in Australia and overseas to create a robust and clinically credible mental health classification system for funding purposes

Advocates for the MHCASC system argue it will have superior incentives for productivity, will be fairer (the same price for the same services) and reinforce best practice (such as reducing excessive hospital stays). Achieving this is contingent on the tools available for classifying and setting prices for services. Mental health is not well served by the available systems. In the first instance, Diagnostic Related Groups (DRG's) are considered inadequate for funding acute

psychiatric inpatient stays as they only explain between two percent and four percent of variance in length of stay. Ben Tovin et al (1994) examined a reworking of the DRG's for Australian National Diagnosis Related Groups, Version 3. By trimming and excluding missing diagnosis cases the explanation of variance was improved by 19 percent using Victorian and South Australian data sets. A further limitation of available tools for classifying and costing mental health services is the exclusion of community mental health services and long stay inpatient services. This is a major limitation given the objective of the National Mental Health Strategy for integration across the three major settings - acute inpatient, community and long stay residential. It would be pointless to adopt a system that only measured one component of a service (acute psychiatric inpatient days) and which did not provide a mechanism to accurately support the mechanism of transfer of resources from long stay psychiatric hospitals to the community. The Council of Australian Governments (COAG) has directed that there be greater continuity of care across service settings over time.

The available classification systems are limited to service settings or one-off occasions of service.

The MHCASC project, with substantial input from clinicians, aims ultimately to:



- enhance AN-DRG's by testing whether other patient characteristics can be added to diagnosis to achieve a better explanation of variation in resource use
- identify pattern and types of service use for ambulatory services which can be included in emerging Australian casemix classification systems
- account for residential services to add a mental health dimension to the national work on sub-acute casemix classifications
- to generate episodic management unit costs incorporating multiple service settings over time and based on an episode of illness which can be used to give a funding basis to case management principles

Not only Australia is struggling to develop an accurate costing system for mental health services. Anthony (1996) noted that the National Health Service in the United Kingdom had established a National Steering Group on costing which seeks to use defined casemix groups in costing and contracting. He noted that there was strong interest and commitment to this process but its feasibility was governed partly by the need to implement a minimum data set to support the process nationally. A further problem was the difficulty for mental health clinicians in subscribing to basic notions of case type. This was particularly important because

of the requirement for mental health units to be able to use casemix measures for internal resource management, for costing and contracting and general administration of care. This would not be sustainable if the groupings were perceived to be without meaning.

Other limitations related to the extent to which casemix groupings could be used by purchasers and providers to provide a social rather than medical model of care. In this respect, there were significant areas of definition to be addressed, all of which were of treatment and cost relevance. An additional dimension of casemix involved the development of groupings based on similarity of conditions and outcomes as opposed to resource groups which are groupings of treatment episodes. An understanding of the appropriateness of resources used can be gained from a comparative analysis of how resources are allocated for defined populations of interest. The difficulty of defining mental health casemix has been widely recognised but the distinction between groupings of conditions and groupings of treatments have not.

### **National Mental Health Strategy Priorities for Resource Allocation**

Woolridge (1996) emphasised the importance that the Commonwealth Government places on the reform of mental health service to ensure that there is progress towards meeting targets agreed with the states and territories. For this reason

the National Mental Health Report (published annually) monitors expenditure levels closely. The Commonwealth is committed to a transparent reporting process in which the levels of spending are accurately reflected. A total \$269 million had been made available by the Commonwealth to give impetus to the national reforms. This is being used to provide incentive grants to the state and territories to assist in the restructuring of their services and for projects of national significance. The total estimated recurrent expenditure on mental health services in 1994/95 was \$1.72 billion with state and territory governments responsible for about two thirds. The breakup was \$119 million for health insurance funded private hospitals, \$548 million for Commonwealth funded services and activities and \$1,053 million in services funded directly by the states and territories. The services directly funded by the Commonwealth included the National Mental Health Strategy, payments to the Department of Veteran Affairs, Pharmaceutical benefits, Medicare benefits to General Practitioners and private psychiatrists.

The funding represents 4.7 percent of gross recurrent expenditure of health services. Woolridge observed that it was not possible to compare Australia with other countries on this measure because of the different ways of defining services and expenditure. He also noted that recurrent expenditure on Australia's mental health services had increased by 11.1 percent since 1992/93 from \$1.55 billion to \$1.72 billion. Commonwealth Government expenditure had increased by 30.4 percent arising from the implementation of the National Mental Health Strategy

(\$32.5 million increase), growth in Medicare benefits payments to private psychiatrists (\$18 million increase) and pharmaceutical benefits for psychiatric drugs (\$62.5 million increase). Similarly, total expenditure by the states and territories had increased by 3.1 percent and the greatest growth relative to baseline occurred in Queensland and New South Wales, the states with the lowest levels of per capita mental health funding.

### **Resource Allocation at the NSW Area Health Service Level**

In New South Wales all Health Areas receive a dedicated program budget for mental health services. The allocation comprises a base allocation of the previous years expenditure, adjustments for award variations and the consumer price index. In recent years the NSW Health Department has allocated 'enhancements' for special projects using funding made available following the Federal Commission into the Human Rights of People with a Mental Illness and additional funding provided through the implementation of the National Mental Health Strategy. Recurrent budget increases were also announced in 2000 to be directed towards priority areas in state health services.

The 'enhancement' funding must be utilised to achieve specific reforms identified as part of the National Mental Health Plan and to advance evidence-based best practice projects. Examples of the former include transition funding to provide new

services while reducing the size of stand-alone psychiatric hospitals. Examples of evidence-based practice projects include 'enhancements' to implement the National Health and Medical Research guidelines for the assessment and treatment of adolescent depression and early psychosis programs. This funding recognises that it takes time to change traditional ways of providing services and there is a danger in dismantling one way of providing services before having a well educated workforce and new system in place to replace it. This 'enhancement' funding allows a level of phasing in of new projects.

The Area Health Service budget is dedicated to several program streams - acute inpatients, rehabilitation, extended care, and community mental health services. One of the strategies of the National Mental Health Plan is to correct what is regarded as an imbalance of funding between inpatient and community services by progressively transferring more funding for the provision of community-based services. This has been particularly evident in those Area Health Services with psychiatric hospitals where funding has been progressively removed over the last 15 years and transferred to 'resource poor' health areas to allow them to develop new inpatient and community-based services. These 'resource poor' areas also receive a higher priority for 'enhancement' funding particularly if they are parts of the state with a growing population.

The main form of Commonwealth evaluation is through the National Mental Health Strategy report. It is possible each year to determine how much is spent in each program stream, how many staff are employed, what the average per capita funding is and the balance of funding between inpatient and community services. Yet this reporting is in a rudimentary form and will become more accurate and comprehensive over time. The Boards of individual Area Health Services also enter into yearly Performance Agreements with Area Directors of Mental Health Services. These agreements specify the targets and performance indicators for mental health services and ultimately are incorporated into the Board's Performance Agreement with the Minister for Health.

## LINKING RESOURCE ALLOCATION TO EPIDEMIOLOGICAL ASSESSMENT OF NEED IN TREATED POPULATIONS

### Defining the Need for Treatment

Given the amount being spent on the treatment and rehabilitation of people with a mental illness in Australia, it is reasonable to expect that resources are being allocated to those most in need. This would satisfy one of Morris' (1964) uses of epidemiology to guide resource allocation in the most efficient and effective manner for high priority groups. How can it be ensured that funds are being used to maximum effectiveness and for the populations who most need treatment? Solomon et al (1993) adopted for MHCASC purposes the definition of severe mental illness developed by the United States National Advisory Mental Health Council. This incorporates diagnosis, disability and duration and concluded that there are about 2.8 percent of adults and 3.2 percent of children in the community with a serious mental illness. Another six percent of adults were regarded as having less serious mental disorders. Only half of those with a serious mental illness were receiving treatment from either public mental health services, private psychiatrists or general practitioners. To obtain Australian data a National Study of Mental Health and Well-being was undertaken in 1997. The aims of this national survey were:

- to estimate the prevalence (one month and one year) of the main categories of mental disorder and of significant psychological symptoms in the Australian community
- to determine the amount of disablement associated with these disorders and symptoms
- to determine the use of health and other human services by persons with mental disorders or symptoms

The survey had three components, a survey of 10,000 people aged 18 and over as a sample of the population, a survey of young people and children and a survey of low prevalence mental disorders, particularly schizophrenia and severe affective disorders. For the first time it was possible to obtain an Australian picture of the degree of disablement associated with mental disorder, where treatment was being obtained and from whom. This included whether people were receiving treatment for mental disorders from public or private mental health providers. Basic information was obtained on the socio-demographics of the population surveyed. As the survey population was chosen from throughout Australia including rural and metropolitan areas it accounted for a range of settings and the issue of access to services.



Andrews (1997) described an 'epidemiology of mental health service delivery' and the need to carefully direct treatment to people with disabling mental disorders. He stated that the presence of symptoms and distressing behaviours could impair access to physical health care, income maintenance, education, housing, transport, legal advice and leisure opportunities. People with mental disorders will often have reduced access because of the symptoms and behaviours associated with their disorder and their subsequent ability to compete for access.

There is therefore a requirement to both allocate and manage resources in a way that ensures maximum gain, both through the treatment of symptoms and the reduction of disability. The major treatment load for people with serious mental illness is carried by the public mental health service and the imbalance between the need for treatment of people with serious mental illness and the supply of services to this group is likely to worsen. This in part is a direct consequence of psychiatrists being largely absorbed into Commonwealth Medical Benefits Schedule funded private practice where only one-third of patients have a serious mental illness. A number of financial disincentives for the treatment of people with a serious mental illness have been identified including the need for them to be direct billed, non-attendance at appointments, and consultation with families and social networks is either not reimbursed or attracts a lower level of reimbursement.

Psychiatrists as a group are becoming increasingly sub-specialised. It is possible to generate a practice where a person with a psychosis is not routinely consulted. Specialist referral networks have also been established which allows the transfer of patients between private consultants when one is considered to have specific expertise in the treatment of a mental disorder but not necessarily psychotic conditions.

### **National Mental Health Information Development in Australia**

As previously alluded to, the Commonwealth Department of Health and Aged Care produced a National Mental Health Information Development report (1999) into progress nationally over the period 1993-1998 in the area of information development. The Report summarises the gains and limited achievements and identifies the major aims for the next five years. Significantly, six information modules have been drafted which delineate the responsibilities for each of the stakeholders. These have been developed after consideration of what progress has been made, the current status of mental health information and the ultimate aims of the National Mental Health Plan.

The achievements 1993-1998 include the development of National Mental Health Policy Indicators, a National Minimum Data Set, Measures of Consumer Outcomes, alternative measures of casemix, and estimating the mental health needs of the

Australian population. Significantly, the evaluation of the current status of Mental Health Information identified limited patient data, no standard outcome measures, no process for collection of data on community mental health care, lack of benchmarks to evaluate services, no capacity for data linkage, limited understanding of the broader population mental health needs, and no mechanism for coverage of the specialised psychiatric disability support sector.

The modules for implementation in the next stage of the National Mental Health Plan seek to address these areas:

**Module 1:** Implementation strategy for introducing routine consumer outcome measurement in mental health services.

**Module 2:** Development and implementation of national service quality indicators for mental health services.

**Module 3:** Further development and implementation of a national mental health casemix information system.

**Module 4:** Understanding population mental health needs.

**Module 5:** Annual monitoring and reporting of progress under the Australian Health Care Agreements and the Second National Mental Health Plan.

**Current Reporting Systems in New South Wales**

The NSW Health Department Annual Report for the financial year ended 1996/97 identified a major goal to ensure access to comprehensive services on the basis of need. Yet it is significant that the report to Parliament under Section 301 of the Mental Health Act (1990) does not detail precisely who was treated in psychiatric services, for how long or with what outcomes. The report emphasises the number of gazetted and degazetted beds under the Mental Health Act, the numbers in residence at the end of the financial year, total admissions, numbers on leave and deaths during the 12 months to the end of June 1997. This annual reporting is limited given that in excess of \$327 million of state funds were expended. There is no clear indication that the funding actually reached the people most in need or that it was utilised in the most efficient manner. While there were 36,140 admissions (including day only patients) to public hospital psychiatric beds it can only be presumed that they were the people most in need. The report does not provide information about the diagnosis or the casemix of the population treated. It is not possible to obtain data that separates admission of people with psychotic conditions from other disorders. There is no attempt to separate out formal and

informal admissions under the Mental Health Act or those admitted under the Mental Illness provisions versus the Mentally Disordered provisions. In short, the report contains little clinical or epidemiological information. There is certainly no way of establishing a link between need and treatment for certain diagnostic groups. As the report only covers facilities gazetted under the Mental Health Act there is no information reported concerning the hundreds of thousands of people who are treated by community mental health services in New South Wales each year. This is a larger population than those treated in public hospital beds.

The fact that there is no minimum data set for reporting purposes denies an enormous amount of useful epidemiological information for service planning and resource allocation purposes.

The Inpatients Statistical Collection provides limited coded information using the International Classification of Disorders. It does not provide information as to why a person was admitted into treatment (unable to care for themselves, a danger to others, the presence of co-morbidity etc) or precipitating events such as homelessness, defaulting on medication, failure to respond to community treatment programs etc. For example, a diagnosis of schizophrenia does not by itself warrant admission as many people with this disorder are successfully cared for in the community - there is always a reason or reasons for admission that in part describes the epidemiology of the illness and the linkages with treatment services.

The ISC can provide consolidated information on the major diagnostic conditions, yet this information is not used for comparative purposes between health services to determine treated incidence and prevalence rates for particular disorders, the outcomes of particular treatment approaches and the levels of resource allocation. The amount of socio-demographic information collected varies according to the service. This is not standardised throughout the mental health system as there is no central clearing house for information.

### **New South Wales Mental Health Information Development Program**

To address the major deficiencies in mental health information systems and to meet the new Commonwealth reporting requirements the New South Wales Health Department has embarked on a major program to upgrade the volume, range and quality of information.

Raphael (2000) noted that in order to achieve the Commonwealth objectives a number of projects have been identified as priorities. These include the development of a client data linkage; information and data development; national reporting capacity, training and business process re-engineering; information system modifications; infrastructure deployment and communications strategy.

To facilitate those projects a Mental Health Information Development Steering Committee has been appointed with wide Terms of Reference to ensure that development and implementation proceeds at the correct pace. The complexity, variety and amount of work cannot be under-estimated. While the project emphasis is on mental health, the entire initiative must be viewed within the wider context of the overall NSW health information management portfolio.

To this extent, there must be clear linkages to central systems with a capacity for information to cascade between different portfolios and functions.

The complexity of the program may be gauged to some extent by the wide and diverse membership of the steering committee, which is chaired by the Deputy Director General of the New South Wales Health Department. Other members are drawn from specialised fields such as information services, public affairs, College of Psychiatry, mental health nursing and capital works. It is significant that specific provision has been made for field representatives to ensure clinical interests are strongly represented. This is paramount if the new initiatives are to receive industry endorsement.

Callaly et al (1997) identified an imperative to adopt an information system for a comprehensive care management system which supported quality monitoring and clinical effectiveness including the production and implementation of evidence-

based clinical guidelines, clinical outcomes measurement and cost-effective delivery of care. He noted that the purchasers of psychiatric services were increasingly demanding value for money and consumers are becoming more informed about treatments and increasingly holding care systems accountable. From the point of view of mental health service research it was vital that an information system was available to explore how most effectively to provide services, including the evaluation of clinical interventions and service responses. Health care organisations in the United States initially set up internal stand-alone information systems that lacked networking, data standards and data exchange capabilities. These are critical features for maintaining continuity of care and accumulating reliable and valid data for research and policy development.

New south Wales should learn from the lessons of the United States.

Schreter (1997) observed that it is now mandatory in the United States for health care organisations to maintain huge data bases on clinical services including who was using them, for what problems, by what level of clinician as well as the interventions utilised and how patients responded. The issue, however, is the willingness to share this information with other than the purchaser or services. A database of consolidated and shared clinical information would allow questions to be asked about the efficiency and effectiveness of patient care systems which in Australia and elsewhere cannot be answered entirely at the moment.



## **An Increasing Emphasis on the Mentally Ill**

The need to place greater emphasis on the treatment and rehabilitation of people with a serious mental illness was recognised in New South Wales in 1982 with the release of the Richmond Report, an enquiry into the treatment and care of people with a mental illness and a developmental disability. Richmond concluded that the needs of people with a serious mental illness had been neglected and there was an urgent requirement to provide comprehensive networks of inpatient and community-based mental health services to ensure proper treatment and follow-up for patients and their families. The NSW Health Department adopted this report in recognition that the needs of these people would continue to be largely the responsibility of the public sector. A controversial component of the report was a recommendation that longer-term patients in psychiatric hospitals should be given an opportunity to live in the community with adequate housing support and clinical care. A small amount of seeding funding was provided to allow this to occur and the decision taken to progressively transfer resources from inpatient services into the community as the patients departed. This, however, was only one section of the report, but the part that attracted the most political and industrial attention. Other recommendations identified the need to develop assertive community-based treatment teams for newly-diagnosed patients and an increased emphasis on providing long-term support to the families of people with a serious mental illness. Richmond recognised that there would never be sufficient numbers of beds in

psychiatric institutions to treat every person with a serious mental illness and emphasis needed to be on care in the community. Richmond strongly emphasised the need to monitor the care of people in the community to ensure that they were receiving the best level of care possible. The serious consequences of disabling mental illness for patients is well recognised and their inability to always advocate for their own rights and needs. It is clear therefore that since the early 1980's New South Wales has a history of recognising the need to allocate resources to ensure that people who are most impaired, disabled and handicapped receive the necessary support to live as fulfilling a life as possible. Just as important is the need to establish clinical support priorities and to monitor the effectiveness of treatment outcomes.

As has been noted, the New South Wales Department of Health is committed to funding programs of known effectiveness that are linked to best evidence-based practice. Additional funding will be directed to those areas of mental health where the needs are greatest but currently under-resourced. To this end, new funding has already been directed to high priority programs. Both State and National funding has been allocated to suicide prevention programs and special services for the children of parents with a mental illness. The rationale for these allocations has been the lack of priority given to these populations in the past and their recognition as being 'at risk' groups. Yet the funds represent only a small proportion of the total mental health budget allocated for treatment services. To an extent they fall

into the area of health promotion projects with a clear early intervention emphasis. This is, however, a discernible step towards a funding approach which recognises the epidemiological significance of certain types of mental illness and the need to initiate early assessment and intervention using best evidence-based approaches. To be effective this requires new 'cases' to be identified early in the development of mental illness and the appropriate interventions commenced.

It remains a long way from a broader evidence-based approach that encompasses all types of early intervention and treatment for the full range of conditions based on severity, although this is the aim.

In New South Wales two notable examples of directing resources on the basis of epidemiological need are the Aboriginal Mental Health Program and the Boarding House Program. Special allocations have been made for Aboriginal people due to the high levels of mental disorder including co-morbidity in these populations. This included the employment and training of Koori mental health workers to provide prevention, early intervention and treatment programs within their communities. The second program has provided a dedicated budget for the provision of aftercare services for people with a long-term mental illness who have been accommodated in boarding houses often in sub-standard conditions. The intent is to relocate many of these individuals into accommodation provided by the Department of Housing with follow-up by the Boarding House teams. In both these

cases the populations and their needs are easily discernible and funds have been allocated due to the attention brought to their plight by various commissions of inquiry. It must be noted, however, that while their needs are highly obvious these individuals comprise only a tiny proportion of the population who are affected by short or long-term mental disorders and for whom specialist treatment programs are required.

### **The Growing Burden of Mental Illness - The Epidemiological Significance**

A recent study (1996) by the Harvard School of Public Health on behalf of the World Health Organisation and the World Bank concluded that the next two decades will see dramatic changes in the health needs of the world's population. In particular it concluded that the burdens of mental disorders, such as depression, alcohol dependence and schizophrenia have been seriously underestimated by traditional approaches that take account only of death and not disability. The report noted that while psychiatric conditions are responsible for little more than one percent of deaths they account for almost 11 percent of disease burden world-wide. In 1990 about five million people died of injuries of all types, two thirds of them men. Among young adults road traffic accidents, suicide, war, fire and violence figure within the 10 leading causes of death. The report found that of the 10 leading causes of disability world-wide in 1990 (measured in years lived with a disability) five were psychiatric conditions - Unipolar Depression, alcohol use,

Bipolar Affective Disorder (Manic Depression), Schizophrenia and Obsessive Compulsive Disorder. Unipolar Depression alone was responsible for more than one in every 10 years of life lived with a disability world-wide. The report noted that

All together, psychiatric and neurological conditions accounted for 28 percent of YLD's (Years Lived with Disability), compared with 1.4 percent of all deaths and 1.1 percent of years of life lost. The predominance of these conditions is by no means restricted to the rich countries, although their burden is highest in the established market economies. They were the most important contributor to YLD's in all regions except sub-Saharan Africa, where they accounted for a relatively modest 16 percent of the total.

It was estimated that in 1990 Unipolar Major Depression afflicted 50.8 million alone. It was predicted that the global pattern of disease burden is expected to shift over the next 24 years. In 1990 the three leading causes of disease burden in descending order were pneumonia, diarrhoeal diseases and perinatal conditions. By 2020 this will change to ischaemic heart disease, depression and road traffic accidents. The report also looked separately at the disability caused by alcohol abuse and found that in 1990 it was the fourth leading cause of disability in the world. It is the leading cause of male disability and the 10<sup>th</sup> largest in women in the developed regions.

While the report focuses on death and disability there are enormous associated social and economic implications. This arises due to the loss from the community of human talent and productivity and the cost associated with maintaining many individuals on pensions or sickness benefits, sometimes for extended periods of time. Consequently there are important financial and humanitarian dimensions associated with psychiatric disability. This extends well past the individual and into their immediate families who must come to terms with the illness of their relative and all the associated implications.

Significantly, the fact that in Australia both State and Commonwealth governments have moved to increase resources for mental health services and prioritised the areas for attention provides some hope for the future. The report concerning the Global Burden of Disease provided evidence for a shift in resources away from other areas of health care to mental health. McGorry (1997) expressed concern that in the movement towards a broader and more inclusive treatment approach for a wider range of disorders that funding is not stripped away from treatment programs for psychotic people. This is always a risk unless illness severity is not highlighted in clinical assessment.

Psychiatry has become better at standardising diagnostic systems to the extent that both the ICD-10 and DSM-IV can almost be used interchangeably. Yet, as hitherto noted this is symptom-based for the most part, although the Global

Assessment of Functioning in the DSM-IV attempts to quantify the impact of an illness on the lifestyle of an individual. As Morris (1964) noted one of the most important uses of epidemiology is to chart the course of conditions which become chronic and assess their impact on the person, their family and the community. This has been done relatively poorly in psychiatry. It is difficult therefore to argue for a greater relationship between funding and assessed levels of psychiatric disability when in fact psychiatric disability has never been assessed accurately.

The emphasis internationally has been on determining the incidence and prevalence of mental illness. This, however, while important, provides little information concerning the ongoing consequences of mental illness in relation to life functioning.

## LINKING RESOURCE ALLOCATION TO OUTCOMES EVALUATION IN TREATED POPULATION

### The Extent of Psychiatric Disability

The true extent of psychiatric disability in the community has only been highlighted since the publication by the World Health Organisation of reports such as the Global Burden of Disease (1996). Rehabilitation has received less emphasis than symptom reduction in the development and implementation of management plans for people with a mental illness. The reasons for this are many, but include the tendency to treat what appears to be the most distressing or acute symptoms of the psychiatric condition. Individuals suffering from long-standing mental illness are frequently assessed as requiring rehabilitation programs which in the main are inpatient based. Community rehabilitation has, however, developed a greater profile in psychiatry over the last decade. In New South Wales, because budgets have been largely allocated on an historical basis, it has been up to the individual mental health service as to what emphasis has been placed on rehabilitation. Health Departments have never allocated a budget specifically for rehabilitation or disability prevention and reduction programs. This has been decided at the individual Area Health Service level. The refocussing of the training of mental health professionals to incorporate a recognition of the potentially serious disabling aspects of mental illness has caused a subtle shift in emphasis.



The World Health Organisation has placed much greater priority on mental health in the revision of the International Classification of Impairments, Disabilities and Handicaps (ICIDH). Ustun et al (1994) identified the need to review the experience in the use of the ICIDH in mental health and the need for development of operational definitions and assessment instruments that are directly linked to the ICIDH. For definitional purposes the following were adopted:

***Impairment:*** an abnormality of psychological or physical functions or of appearance.

***Disability:*** an interference with the performance of an activity by an individual in relation to the environment.

***Handicap:*** a societal disadvantage for an individual that limits or prevents the importance of a social role that is normal for the individual.

These parameters are rarely comprehensively assessed when interviewing people with mental illness or may only be touched on broadly in the mental state assessment and social history taking. The World Health Organisation has recognised the need to assess impairment, disability and handicap throughout the course of an illness and in conjunction with the process of making the initial

differential diagnosis. While it was possible to provide symptom relief the disabilities of mental disorder were rarely fully recognised, let alone addressed, until it was apparent that the individual was finding it difficult to function at the level they had premorbidly. Anthony et al (1982) concluded that many earlier care paradigms had converged around the idea of rehabilitation as a restoration process, designed to remove the residual handicaps that interfere with a person's ability to function. Yet, too little emphasis was placed on identifying these residual handicaps in the first instance and instituting rehabilitation processes.

### **Rehabilitation - A Place and a Process**

Rehabilitation needs to occur in conjunction with treatment (symptom removal or relief) irrespective of whether it occurs in a community or inpatient setting. The important objective is to evaluate the implications of mental disorder on functioning and social role adaptation.

Historically in Australia psychiatric rehabilitation services were aimed at reducing disability in people with mental disorders and provided by psychiatric hospitals in 'rehabilitation' wards. This illustrated a belief and a practice that rehabilitation was something provided in a specific location. The revelation that rehabilitation was a process that started with assessment and treatment and was ongoing was only really understood in the 1980's. Currently the emphasis on individual management

plans requires at least a basic assessment of psychiatric disability to be performed which in turn allows the treatment plan to include a rehabilitation focus. This necessitates the educational base of mental health workers to be expanded to obtain a better understanding of the impact of psychiatric disability and how it can be comprehensively assessed. The historical emphasis on symptom reduction has been perpetuated by the existence of models that have not explicitly identified the rehabilitation components of treatment systems. The absence of separate financial allocations and reporting requirements has reinforced this approach by not identifying the separate cost of various therapeutic interventions. It is not possible to identify in the Department of Health Reporting System (DOHRS) how much money is spent on acute treatment versus rehabilitation programs. It is also not possible to obtain an impression of the relative emphasis placed on either treatment or rehabilitation in a clinical sense. Presently, the Inpatient Statistical Collection has no procedure codes to match the Major Diagnostic Categories so it is not possible to identify the type and extent of therapeutic interventions for each admission unless this information is collected by the individual service. This raises a number of issues related to standardisation and what constitutes treatment and rehabilitation and how these are pursued.

Designated rehabilitation units within psychiatric institutions are mainly utilised for the extended care populations that remain from the deinstitutionalisation programs of the last 30 years. The content of rehabilitation programs are often not

specified at the state-wide level (although this is being addressed in 2001) and rehabilitation outcomes are not routinely reported. The NSW Health Department obtains some information on the long stay population by a census that is carried out annually. This provides a minimum amount of non-clinical data concerning the location of these patients, their total numbers, age, sex and diagnostic breakdown. Health Areas receive a global mental health budget. This is split between community, inpatient and special projects and there is no method to separately account for cost and outcomes of specific programs within each area unless the particular Area has a reason for separating out this information. This was identified by Morris-Yates and Andrews (1997) when considering the need for local area information systems that facilitated the development of outcome oriented information systems. They noted the need to gather a range of data that could be used to evaluate what impact particular treatment and rehabilitation approaches were having. This needed to be linked to the costs of providing such a service.

The NSW Department of Health's 'Caring for Mental Health' policy (1998) and subsequent publications have focussed for the first time on the need to develop comprehensive clinical information systems that will allow an epidemiological profile to be obtained of treated populations. The policy focuses on the need to develop Individual Service Plans for consumers and the importance of being able to routinely evaluate clinical progress across the life span. The importance of consumers being involved in this process of individual service plan development has

also been emphasised and the need to develop standardised assessment instruments. A number of benefits will be derived from the implementation of this policy in the field. It should be possible to evaluate treatment and rehabilitation outcomes for particular programs and even compare the effectiveness of these interventions between different health areas and similar populations. From the viewpoint of cost-effectiveness and outcome evaluation, more information will be available.

The adoption of a systematic approach that identifies and measures outcomes should also ensure that services are not funded on the basis of 'cheapest is best' but rather on the basis of best evidence-based treatment approaches which achieve the maximum health gain for the dollars spent. This should encourage innovative approaches to treatment and rehabilitation that encourages both best practice and cost effectiveness across a range of settings for consumers with different levels of treatment and rehabilitation requirements. This is a long way from the present approach which fails to recognise the ingredients of a good system of care, the needs of consumers or what is an adequate funding base. It is noteworthy that 'Caring for Mental Health' explicitly notes the need for 'compassion' in any treatment approach.

It is apparent that the current system of allocating resources for mental health services in NSW largely ignores the central issue of need which is inadequately

recognised and assessed. The availability of good information systems should guide resource allocation to ensure the development of sustainable, clinically effective and client-centred services. The challenge is to retain what works, refine it and encourage innovative approaches that recognise the need for partnerships between carers and consumers. Most importantly, treatment and rehabilitation services must be flexible enough to meet the needs of the consumer at critical points of their lives rather than expecting them to adjust to system requirements which may not be entirely appropriate. A component of this lies in the development of national outcome standards and systems for assessing whether services are meeting standards. The National Mental Health Strategy identified the need to institute regular reviews of client outcomes and to ensure that all services satisfy the standards and rights of the United Nations resolution concerning the human, civil and legal rights of mentally ill people. Stedman et al (1997) recommended measures that could be utilised in various mental health settings by clinicians and consumers to measure outcomes. This approach has also been taken internationally with increased awareness and emphasis on the requirement to determine what treatment and rehabilitation approaches offered the best outcomes. Stevens et al (1996) observed that the detailed clinical and administrative targets established by the English National Health Service required that each target be specified as an operationally measurable outcome achievable by a given data. Implicit in this (as in Australia) was the need for the development of a common mental health information system which could provide a bottom-up minimal clinical data set as well

as a top-down administrative information system in order to measure outcomes. This will be achieved in New South Wales through the introduction of the Mental Health Outcomes and Assessment Training Project (MH-OAT).

Two types of complementary methods of measurement were required. One would focus on clinical targets linked to the delivery of specified care to individuals assessed and the consequent reduction in excess mortality, symptoms, behavioural signs, social disablement and improvement in quality of life. The other form of assessment would be aimed at satisfying administrative measurement of outputs such as the number of places or staff, length of stay, waiting times, patients or clients seen, area, regional and national responsibilities as defined.

Stevens et al noted that the latter was relatively easier to achieve as they were couched in terms of numbers and categories that were easier to measure, whereas clinical targets were more complex requiring the measurement of morbidity which required assessment of type, severity and persistence of symptoms and disabilities. This is the current situation in Australia as progress is made towards meeting the objectives of the National Mental Health Policy and Plan. Historically the states and territories have accorded different levels of priority to the measurement of outcomes and outputs in mental health services. As noted previously in New South Wales this has usually meant the collection of a small amount of information

necessary to meet the requirements for reports to State Parliament under the Mental Health Act (1990), rather than outcome data.

The National Mental Health Strategy has placed a much higher requirement on mental health services to provide a greater amount of information to assess the epidemiology of mental disorders, the volume and outcomes of treatment and the associated costs to the community. Within the National Health Service Jenkins (1991) identified indicators for mental health status within the population. These included:

### **Excess in Standardised Mortality Rates**

SMR's can be provided for deaths with known causes. This may in turn be linked to psychiatric diagnosis. As most severe mental disorders have higher ratios than the general population (twice the expected mortality rate for schizophrenia) it is important to collate this information nationally and by defined NHS area. The establishment of registers enabled the monitoring of SMR's in a wider range of diagnoses and also to measure progress with specified targets. This provided valuable insight into the success or otherwise of treatment programs and allowed comparisons to be drawn between areas. Ultimately, this is a public health measure and of great importance.



## **Reduction in Disablement and Morbidity at Primary Care Level**

This could be measured at the level of all primary health care settings including general practitioner practices and community health services by identifying the numbers of people attending each year and the extent to which the problems were relieved. In the NHS a number of disablement and morbidity targets have been set. These include the establishment of arrangements between primary health care providers and specialist teams for the provision of liaison, assessment and treatment services for people with mental disorders where there is associated personal distress and social disability. A further target is the establishment of a local mental health information system to co-ordinate care between general practitioners and specialist teams.

## **Reduction of Disablement and Morbidity at Specialist Level**

Specialist mental health services would aim to reduce relapse, re-admission and drop-out rates for severe mental disorders by 20 percent by offering good quality long-term continuity of care with provision for user and carer choice. A further target is to identify those with severe mental illness among the homeless within each locality and reduce the number by 20 percent by provision of acceptable residential and day care.

## **Ensuring Quality of Life**

The target was the reduction of impairment which in turn increases the options for consumers by improving autonomy, personal choice, and other aspects for an improved quality of life. Those assessed as being at risk would be monitored to ensure adequate heat, light, food, clothing and protection against the elements. Ongoing assessment of other needs for good quality housing, occupation, recreation, protection against exploitation, a sympathetic and knowledgeable environment, realistic autonomy and sheltered access to amenities would occur.

Outcome assessment would occur through the collection of information from a variety of agencies using standardised questionnaires completed on an individual basis and aggregated to provide population information.

## **District, Regional and National Administrative Targets in the UK**

Within the United Kingdom area, national and regional targets are administrative in nature and related to quantitative measurements. This information is collected locally and fed upward through district, area, regional and national monitoring systems. Jenkins (1991) noted that the impetus to change is such that a degree of integration of existing systems was required to allow sound epidemiological information to be collected. The following levels of a Mental Health Information System to assess outcomes were identified:

- individual patient care: clinical assessment (symptoms, behaviour, course, social disablement); social assessment (social circumstances, family, occupation, housing, income); life history, treatment, care and welfare plans, care environments, Mental Health Act, discharge letters, liaison, outcomes, audit and research
- multi-agency contracts and community care paths, resource management and planning, reports to contractors
- public health and social service (purchaser) functions such as geographical needs, assessment, planning and targeting, contracts, monitoring and quality control of services, epidemiology
- central returns

The collection and analysis of data will allow Areas to determine how well they are progressing towards meeting national uniform standards aimed at improving the outcomes for consumer.

## The ACHS Care Evaluation Program

In an effort to address the cardinal issue of evaluating the quality of patient care the Australian Council of Healthcare Standards has instituted the development of objective measures of the management and outcome of patient care. Traditionally, the standards used to assess a facility's performance were related to the structures and processes of the service rather than the actual quality of care. The ACHS in conjunction with the Australian medical colleges proceeded to develop a number of objective measures or clinical indicators to identify where there were possible problems or opportunities for improvement in patient management. The ACHS linked the development of clinical indicators to the need to evaluate the outcomes of care. This traversed all medical disciplines, including psychiatry, and while information was provided on the standard of care within a facility the opportunity was also created to benchmark these results on a national basis. From January 1997 all health care facilities participating in the ACHS accreditation program were required to collect clinical indicator data for each calendar year of their accreditation and submit this data at six monthly intervals. The ACHS intended that the clinical indicators would be 'flags' through which the collection and analysis of data could occur to alert of possible problems and provide opportunities for improvements in quality of care. Two types of indicators were established - rate-based and sentinel events. The first are those in which it is common for a certain number of cases to have unfavourable outcomes, eg, infection

rates following surgery. The other is for events which happen so rarely that they should be investigated separately. Within psychiatry, 11 clinical indicators were developed:

- patients not given a diagnosis
- prescription of psychotropic drugs and concurrent medication
- number of treatments, indications and complications relating to ECT
- use of seclusion in relation to time, complications, number of episodes, sedative medication, and examination by a medical practitioner
- major critical incidents (suicides and attempts), assaults, self-mutilation
- length of stay (acute inpatients with a length of stay of greater than 45 days)
- re-admission to hospital (unplanned admissions within 28 days)
- mortality in inpatient or community-based services

- patients with documented evidence of relevant physical examination within 48 hours of admission/intake
- monitoring of care (patients on Lithium prophylaxis and antipsychotic medication)
- discharge planning - evidence of discharge summary or letter of discharge

Routine reporting of these indicators provides a partial insight into the quality of care being given by the service. They are not intended to comprise a quality assurance program in their own right but may be used to augment the effectiveness of a quality assurance program that covers the clinical service. The measurement of indicators also provides a useful medium by which clinicians may be engaged and given feedback. This has always been a problem in public mental health services - how to obtain and retain the clinical input and interest. The ACHS requires evidence of clinician involvement in the analysis of clinical indicator information and many mental health services have established Clinical Indicators Committees to cover these functions.

One of the clear limitations of this approach is the lack of attention given to clinical indicators in community mental health care and other inpatient settings, which is particularly important given that the vast majority of consumers will in

fact be receiving treatment outside the hospital. Without wishing to minimise the importance of inpatient care, the emphasis is increasingly on a shorter length of stay and rapid assimilation back into community life. Little attention has been given to the development of a range of clinical indicator sets to measure the outcomes of community-based mental health care.

## **Outcomes Management Systems**

Smith et al (1997) noted that although there is growing enthusiasm for the implementation of outcomes measurement in all mental health settings in the United States, the integration of outcomes assessment into routine mental health care is still in the early stages. They concluded there was little practical information on how to implement an outcomes management system and there were a number of unresolved issues.

It was noted that although much of the daily administration and promotion of an outcomes management system may be delegated, the introduction of the system required significant managerial input and commitment of resources from the top of the organisation. This included the careful selection of implementation strategies and a participative approach. Smith et al concluded that support for an outcomes assessment program for an entire organisation will be easier to obtain if clinicians are able to see the reciprocal advantages of an outcome management

system. Two important messages needed to be conveyed, the first that outcomes management was not a research project but formed a part of clinical practice on a daily basis. Second, that all individuals must develop an awareness of the need for methodological rigour to ensure information is collected in a standardised way and analysed accordingly. There was no room for an ad hoc approach. It was also important that staff understood that outcomes data would not be used punitively, but to stimulate discussion, to guide clinicians in tailoring treatment programs and to identify the most efficient approaches to treatment.

### **Methods of Assessing Outcomes in Community Mental Health Systems**

In the United Kingdom, as early as the 1980's, consideration was being given to the need for a system of outcome indicators for mental health care. Jenkins (1990) concluded that the development of a system of indicators was a high priority to ensure that clinicians, health authorities and Directors of Public Health could monitor and evaluate mental health care.

Jenkins asserted that an epidemiological population profile of the community needed to be developed and maintained in order to assess mental health status and outcomes over time. To achieve this, the annual reports of the Directors of Public Health should include an assessment of the health of the resident population of the



district with epidemiological evidence, identification of health issues and evaluation of outcomes of existing services.

Jenkins proposed a set of mental health indicators which traversed health care input, process and outcome measures for schizophrenia, affective psychosis, neurosis, dementia, child psychiatry, forensic psychiatry, mental handicap, alcohol and drugs.

These outcome indicators were not exhaustive but rather a baseline for consideration and development by clinicians, researchers and planners.

Currently in Australia there is a growing imperative to routinely measure the outcomes of community mental health care based on the requirements of the National Mental Health Plan. In the United States efforts have been made since the early 1980's to develop an outcomes-based approach to the provision of mental health care. Srebink et al (1998) observed that much of the effort has been directed towards the development of tools for level of care decisions which can support conclusions about the type of care required through direct outcomes measurement or by accurately estimating in the first instance what support was required for successful rehabilitation in the community. This may include placement decisions, providing standards for quality assurance, planning for resource needs and designing services to meet consumer needs.

Ongoing outcomes assessment is vital to guide level of care decisions and increasingly the technique used to achieve this is assessment tools. Assessment is carried out in conjunction with a number of other interventions and is not relied upon solely for decision making. Srebink et al noted that despite the effort to date few reliable tools exist for guiding level of care decisions for mental health outpatient clients. Concern was expressed that those in use may not accurately assess client need and there was a requirement to develop a level of care decision support tool that was reliable and valid. The tool must demonstrate predictable relationships between level of care placement, service utilisation within the range for that level and measure clinical outcomes. In the united States the impetus for assessing clinical outcomes arose in part from the managed care providers who required information to make decisions about resource allocation. Historically, little emphasis was given to this process in the care planning stage for patients. The emphasis in assessment was primarily on the degree of acute or chronic symptomatology present and whether this made the consumer a danger to themselves or others. It was also presumed that once an acute episode of illness had subsided that successful community reintegration would occur providing domiciliary support was available for consumer and carers.

To a large extent for people with low prevalence conditions this was focused on the provision of medication often in depo form. Where day hospitals or activity centres were available the consumer was allocated a placement (if available) and that

tended to become the mainstay of community rehabilitation. Little emphasis was placed on the measurement of disability and in particular the ongoing impact of negative symptoms on functioning. Low priority was placed on obtaining a premorbid history covering educational, social and occupational functioning, or for that matter, whether the consumer had in fact been able to work after having been diagnosed with a mental illness. To a large extent, the emphasis on diagnosis led to large areas of previous functioning being ignored and the consumer being regarded as an invalid, incapable of making a long-term and meaningful contribution to the community. There was little subtlety in the assessment process and a failure to identify strengths as well as weaknesses, opportunities for support as well as limitations and most importantly the wishes of the individual who was often considered incapable of making decisions concerning their own treatment plan.

Dickerson (1997) identified the re-organisation of psychiatric services with increased emphasis on community care as placing greater emphasis on the need for the development of reliable outcome measures. Consumer organisations were also keen to measure the effects of change in the health care system to ensure that consumers were not disadvantaged by being placed in sub-standard accommodation. While standardised measures to assess the degree of psychotic symptoms had been available for some time they did not assess patients' community functioning. Dickerson demonstrated a low correlation between positive psychotic symptoms and patients' social functioning and the reliance on statistics on adverse events as the

main source of outcome measures. These included rates of hospitalisation, incarceration, mortality, unemployment and housing instability. Although important, they did not provide a detailed evaluation of clinical status. Dickerson noted that another method for assessing community functioning involved the use of global rating scales as part of a DSM-IV assessment. This, however, was problematic as this approach provided a single measure of a patients' level of functioning and therefore failed to provide detailed information about a patient's functional difficulties. Further, the community functioning of people with mental illness is complex due to multiple relevant domains, limitations of self-report data, different stakeholders and a range of methodological problems.

Dickerson undertook a review of nine English language instruments that measured the community functioning of outpatient adults with serious mental illness. While not the only tools in use, they were cited in the literature as being most often used in clinical practice. The instruments met the following criteria: data on their reliability and validity has been published; they measured at least two domains of community functioning on separate items or scales; and they were developed between 1986 and 1996. The instruments reviewed were the Behaviour and Symptom Identification Scale, the Independent and Living Skills Survey, the Life Skills Profile, the Multnomah Community Ability Scale, the Quality of Life Interview, the Role Functioning Scale, the Social Adjustment Scale 11, the Social Behaviour Schedule and the Social Functioning Scale.

Four of the instruments consisted of ratings made directly by a clinician and measured functionality ranging from five items (The Role Functioning Scale) through to 17 items (the Multnomah Community Ability Scale). Other instruments relied on self-interview, such as the Quality of Life Interview and the Behaviour and Symptom Identification Scale, while others required administration by a specially trained rater. The latter included the Social Adjustment Scale and the Social Behaviour Scale. It was noted that all these instruments had been developed for a variety of clinical, administrative and research purposes including describing the casemix of consumers, aiding in the determination of service needs by evaluating outcomes of community care and rehabilitation. They had also been utilised to compare groups of patients who vary on other symptoms or social variables, to assess the effects of deinstitutionalisation and service re-organisation, the impact of new treatment interventions and to predict the rate of hospital re-admissions.

Each instrument was evaluated focusing on format, content, items scored, length and population for which it was developed. The conclusions drawn were that the content areas most specifically represented are self-care and social relationships. Importantly, life satisfaction, health status, psychiatric symptoms and work skills were not consistently addressed and a number of instruments lacked behavioural anchors for scale items. Some were not specifically developed for use with seriously mentally ill people but were being used that way (BASIS-32). The review

highlighted the challenges and complexity of developing a valid and reliable instrument that accurately measured outcomes in community settings. Each instrument went some part of the way without in any way evaluating the full range of functional outcomes for an individual or a group. Dickerson concluded there was a range of treatment settings and interest groups with a strong need for careful and systematic evaluation of outcome measures. The relative efficiency of outcome measures in terms of their predictive validity needed to be examined and this was best carried out by an independent organisation that had no vested interest in a specific instrument or delivery system. A number of factors needed to be considered as part of this process:

### **Multiple Domains for Evaluation**

In the assessment of community functioning a range of domains need to be measured including daily living, social skills, ability to manage money, social support, work skills, life satisfaction, family relationships, burden to family, use of leisure time, physical health care and personal safety. It is difficult to obtain an assessment tool that adequately assesses all these areas.

## **Persistent Illness**

The term 'outcome' denoted an endpoint and in reality many serious mental disorders may be life-long and characterised by patterns of periodic exacerbation and improvement that may differ widely among patients. It may therefore be more accurate to speak of 'markers' signifying assessment at one time point in an ongoing process of evaluation.

## **Differences in Point of View**

The community care of a person with mental illness involves a range of stakeholders, family members, psychiatric care providers, insurance payers etc. Each may have a different view concerning the requisite level of functionality and the appropriate outcomes of community rehabilitation. The consumers themselves will also have an opinion which may vary from the other stakeholders. The consumer may be more concerned about their ability to live independently, the psychiatrist may focus on symptoms and the community at large may be concerned about a range of issues including homelessness and safety.

## **Self Reports**

There are two ways of carrying out community rating of outcomes - the first involves an independent external assessment carried out by an agency or health professional. The second is self-assessment where the consumer carries out the assessment and actually rates their progress. There is the potential for a wide variation between the ratings of an external agency and that carried out by the consumer. Neither may necessarily be incorrect but they approach the process from different perspectives. Strong arguments have been put forward for the consumer to self-rate as this ensures their point of view is represented and puts the patient at the centre of his or her own assessment. Arguments against this approach include the absence of insight, the presence of cognitive impairments and lack of co-operation. Alternatively, ratings by others may be limited by less than full knowledge about the patient's day to day life, and the need for established and agreed standards against which outcomes are evaluated to ensure that bias does not enter into the outcomes assessment process.

## **Methodological Issues**

A number of methodological problems occur when attempting to measure outcomes of community care. Wallace (1986) observed that rating scales for the general population tend to have "floor effects" where the functioning of persons with



mental illness may fall at the bottom of a scale and the rating provides little useful information. Another methodological problem affects the rating of behavioural deficits and objective assessment of the reasons for the deficit may be difficult. This includes whether the deficits are due to the lack of a learned skill, the lack of opportunity to perform the skill, amotivation or other factors. Similarly, rating the presence of problem behaviour or behavioural excesses may also be complicated by the difficulty in combining frequency and severity in rating scales.

Another methodological issue concerned the selection of the patient group for outcomes evaluation studies and the sampling of patients within that group. Is it realistic to assess the full range of possible outcomes for all consumers, or should only a number of specific outcomes be assessed due to the issues of complexity, time and cost? Similarly, for research studies a further complication is the selection of an appropriate control or comparison population which would need to be accurately matched for variables such as illness, demographic and treatment modalities.

### **The Differing Views of Outcome Assessment**

It has been presumed that outcome measures perceived by professionals as appropriate would also be endorsed by consumers and carers. Yet a study by Shepherd et al (1994) demonstrated that while there was a clear consensus on the

range of service elements required there was significant differences in the priority given to them which is important when selecting outcomes for evaluation.

Professionals as a group identified the following as important:

- emphasis on treatment, monitoring and professional support
- assertive outreach work
- the need for safety nets for vulnerable patients
- the importance of daycare places with defined roles and functions in the occupational field

Surprisingly, users surveyed identified the following elements as most important:

- the value of social networks (particularly those in user support groups)
- the value of social support in the home
- users who reported taking medication for schizophrenia felt it was more important to have information about its effect and to have access to counselling

- the need for more user-led services with more options and choices for treatment

Carers surveyed emphasised the importance of a range of key elements of care but requested:

- an acknowledgment by professionals of their status as main carers
- a recognition of their potential values as partners in care
- more information about schizophrenia and advice about management
- increased access to professionals via 24 hour services
- improved service co-ordination and communication by professionals

Shepherd et al noted the importance of translating these consensus views into a set of guidelines against which service performance can be monitored and to develop and evaluate training packages for professionals aimed at improving the quality of care delivered. This poses a further set of parameters for outcome evaluation and stresses the numerous influences present within the environment in which consumers are treated. Clearly, there is a wish not be the passive recipients

of care, but active participants in the development of management plans that requires co-operation and communication between professionals, consumers and carers.

Outcomes evaluation must take into consideration the presence or otherwise of these networks. It is worth noting that for many years consumers, particularly those diagnosed with schizophrenia, were considered incapable of participating in such a proactive manner. This image of schizophrenia stemmed from early writings which viewed people with schizophrenia as suffering from personality disintegration and complete lack of insight. There is now a body of evidence that contradicts these images and its suggestion of an inevitable course of deterioration.

## **National Mental Health Standards**

The development of National Mental Health Standards has been the most significant advance towards establishing an outcomes-oriented mental health system in Australia. Whiteford (1997) said that the implementation of national mental health service standards represented an important opportunity to improve the quality of mental health care in Australia. The development of the standards was undertaken by the Australian Council on Healthcare Standards (ACHS), and the Community Health and Standards Program (CHASP). Particular use was made of the Area Integrated Mental Health Standards as a guideline to the specific

requirements of the mental health system. Whiteford stressed that the standards are outcome-oriented with an emphasis on the end result for consumers and carers and reflected a strong value base related to human rights, dignity and empowerment. The development of the standards took place between 1995-96 and aimed to produce a set which could be applied to all mental health services across Australia. Twelve guiding principles were established which included a requirement to achieve positive outcomes for consumers, and the need to put in place a mental health system that provided co-ordinated, comprehensive and individualised care.

Mental health services will be assessed during accreditation surveys to ensure that the standards are in fact being met. This again is an emphasis on outcomes by ensuring that the structures and processes necessary to ensure that mentally ill people are receiving the best possible care are being implemented. Each standard specifies a range of criteria on which services will be reviewed. All are outcomes-oriented with one section in particular (Criteria 9.28-9.34) focusing specifically on service evaluation, outcomes measurement and quality improvement:

**There is documented accountability and responsibility for the evaluation of the MHS.**

**The MHS has a service evaluation strategy which promotes participation by staff, consumers, carers, other service providers and the defined community.**

The MHS routinely monitors health outcomes for individual consumers using a combination of accepted quantitative and qualitative methods.

The MHS conducts or participates in appropriate research activities.

Research proposals are reviewed by an ethics committee constituted and functioning in accordance with the National Health and Medical Research Council on Human Experimentation and Explanatory Notes.

The MHS is able to demonstrate a process of continuous quality improvement. The MHS monitors its performance in regard to the above criteria and utilises data collected to improve performance as part of a quality improvement process.

## CHAPTER 3

### SUMMARY OF FINDINGS

New South Wales mental health services are required to establish clinical priorities in order to guide the allocation of resources to improve the mental health of the community. As a baseline a National Study of Mental Health and Wellbeing (1997) was undertaken into three population groups - a survey of 10,000 people aged 18 and over, a survey of young people and children and a survey of low prevalence disorders. In addition, a number of prominent psychiatrist/epidemiologists such as Andrews (1997) described the need to understand the 'epidemiology of mental health services delivery'. In effect, he noted that the very presence of disability and impairment among people with mental illness could prevent them from accessing proper care and this aspect of epidemiology needed to be understood and allowed for.

To overcome the paucity of epidemiological and clinical information New South Wales has endorsed the National Mental Health Information Development Project which, over time, will provide a wide range of data concerning the development, course, distribution and frequency of mental illness. This has taken on added importance due to warnings by the World Health Organisation that the burden of

mental illness had been seriously underestimated that the unipolar depression alone accounted for one in ten years lived with a disability worldwide.

The World Health Organisation has modified the International Classification of Impairment, Disability and Handicap to ensure improved epidemiological and clinical assessment of these impacts of mental illness. The New South Wales Health Department is currently (2001) preparing a major policy statement on the requirements for rehabilitation among people with a mental illness.

Increasingly mental health services are being subjected to close economic scrutiny in what is a highly competitive environment. In New south Wales there have been attempts to develop a Resource Distribution formula and various needs indexes to guide resource allocation. Similarly the Commonwealth has funded the development of a Mental Health Classification and Services Cost Project (MH-CASC) due to the serious limitations of AN-DRG's for acute inpatient mental health and the complete absence of other case classification systems for community and long stay patients.

In New South Wales current emphasis (2001) is being placed on the development of a population-based Mental Health Clinical Care and Prevention Model (NH-CCP) which incorporates epidemiological, clinical and service utilisation data.



It will be used to guide planning and resource allocation and require ongoing revision.

The Australian National Mental Health Standards have placed great emphasis on the development of an outcomes oriented mental health system. This is similar to the United Kingdom where Smith (1997) noted the growing demand to measure both outputs and outcomes. Jenkins (1990) had earlier advocated the development and maintenance of epidemiologically-based profiles of patients in care in order to monitor both individual and group outcomes.

In New South Wales an example of the outcomes orientation is the Australian Council of Healthcare Standards Mental Health Clinical Indicators Program which involves objective measurement of a limited number of clinical indicators. Under the new Mental Health Outcomes and Assessment Training Project (2001) routine outcomes assessment will occur at designated times within treatment episodes. Allowance will also be made for self-report measures to be used by patients.

Shepherd (1997) concluded that consumers, professionals and carers all place different emphasis on what should be evaluated. In the United States Dickerson (1997) reviewed nine of the international outcomes assessment instruments which are considered reliable and found methodological and practical limitations with them all. Quite simply, due to the complexities surrounding mental illness,

epidemiology outcomes assessment is a complex process and it is clear that there is no one instrument that 'fits all' situations and requirements.

## CONCLUSION

Clinical priority setting, resource allocation and outcome assessment within mental health services must be supported by reliable information systems. There is an emerging consensus as to the methods by which this can occur due to significant research that has been carried out in Australia and overseas. The National Mental Health Policy clearly identified the deficiencies and the difficulties in coming to terms with these key areas and set the agenda for reform. To a large extent these elements are about measurement, which has always been a problem within mental health services. The influence of the World Health Organisation in standardising diagnostic classification systems and highlighting the requirement for a far greater emphasis on rehabilitation has been crucial. The growing demand for industry standards which guarantee levels of care, outputs and outcomes has been met with concern in some sections but has now virtually been enshrined through government policy. Groups such as the Australian Council of Healthcare Standards now routinely report on clinical indicators for acute inpatient psychiatry units. While this falls well short of covering every treatment setting it is a step in the right direction. It is important in this entire scenario to recognise the growing financial imperative to quantify and measure activity. Mental health services require sophisticated systems by which cost effectiveness can be measured for particular patient groups which implies that these groups and their needs can be accurately described.

Administrators must have access to essential information concerning the populations and individuals under treatment. They must know the epidemiology of the disorders in their area of administration, have a clear picture of the degree of disablement, a detailed working knowledge of the best evidence-based treatment systems, the capacity to measure outcomes and outputs. Most importantly, there must be a link between this information and the way financial resources are allocated. It is essential that both positive and negative outcomes are highlighted to determine the priorities for resource allocation. To an extent, these priorities will be centrally ordained for specific project areas.

The populations within different health areas of New South Wales will vary according to their socio-demographics (rural/urban, age profiles, ethnicity etc). They will also vary in terms of their access to services with rural people being disadvantaged by the lack of provision of services. Higher levels of unemployment in rural and some coastal areas, the absence of non-government organisations and difficulties in recruiting mental health professionals will also influence the types and outcomes of service provided.

It is essential that Area health service planning processes reflect the specific needs of the catchment population being serviced. Guidelines for best practice must be considered against the unique features of every area. This process must be driven by the availability of good epidemiological information. For instance, in

recent years considerable publicity has been given to the high levels of youth suicide generally and the particularly high incidence in rural area. Prevention and treatment programs must reflect the realities of rural-based practice through the development of innovative programs that reach the target populations. For instance, the Hunter Area Health Service in New South Wales has developed a program whereby all people who attempt suicide are taken to one treatment centre for assessment and treatment. This approach works well on the Hunter where the distances are not great and both consumers and carers have ready access to the service. It would be more difficult to adopt this model in remote and rural areas where an aggregation of specialist resources is difficult to find and where people may have to travel up to 13 hours by motor vehicle to obtain inpatient treatment. Clearly, a rural model must focus on providing treatment that is more locally accessible through the use of community mental health workers, general practitioners and, where available, telemedicine facilities. Even then, this approach needs to be carefully evaluated from both a quantitative and qualitative viewpoint to determine the cost of operation of such services, and the outcomes for consumers treated in this way.

This is the challenge, to use epidemiological methods to inform the allocation of resources to priority populations and evaluate the outcomes of treatment.

## **CHAPTER 4**

**A critical evaluation of the application of  
Morris' uses of epidemiology within an  
Area Mental Health Service**

## INTRODUCTION

Many mental disorders run a disease course characterised by relapses and remissions. This has been recognised by clinicians and researchers, but not adequately considered in service planning and care delivery systems. A danger exists in viewing the spectrum of mental disorders as having one clinical course, an identical set of treatment interventions and outcomes. An over-reliance on diagnosis as a predictor of prognosis militates against individual care planning within a framework that recognises that a variety of factors will assist in or impede recovery. A risk exists that consumers will be made to 'fit the system' rather than have their individual needs comprehensively assessed and treatment and rehabilitation programs designed accordingly. Such an approach fails to recognise the range and complexity of mental disorders and the dimensions of diagnosis, duration and disability all of which influence outcomes. It also fails to recognise that there may be differences in the treated incidence and prevalence of mental disorders between localities, health areas and states. These differences may be attributable to a range of factors including unemployment levels, age profile of the population, and numbers of people of non English speaking background. The presence of specialist mental health services some in large Area Health Services will also cause a migration of people with a serious mental illness and their families who will move to where the treatment services are available. This will ultimately lead to a higher than anticipated number of consumers in a defined geographical area.

There is a clear need to determine the numbers of people being treated within each Area Health service, their diagnosis and extent of their disability. Treatment and rehabilitation outcomes need to be routinely assessed. This information must be considered when planning for service enhancements and service development to ensure that the needs of the population are adequately taken into account. A failure to move in this direction will mean that services will never be provided to match the needs of the population. The gathering of epidemiological information can be a valid way of profiling the socio-economic and cultural characteristics of treated populations, their needs and outcomes of treatment interventions.

The current system for providing mental health services is linked to the way that resources have been historically allocated by the New South Wales Health Department to Area Health Services. This is slowly changing under the influence of the National Mental Health Strategy (1992) but generally funding is allocated under one mental health program budget within which there are two major components - inpatient services and community. This entire approach can be classified as 'top down' rather than 'bottom up'. In the latter approach service development and provision would be guided in part by local epidemiological profiles of populations under treatment.

The basis of Area Health Service planning and resource allocation should include a capacity to meet the changing needs of a community with flexibility to move



funding between service elements according to assessed needs. Ultimately this requires the availability of reliable local data that is routinely collected, collated and analysed. While much of this information will be of a clinical nature it is also vital to collect other important information that will influence outcomes for consumers including employment and housing status and level of carer support.

## EPIDEMIOLOGICAL PROFILING

Morris' (1964) uses of epidemiology go well past the traditional applications and provide useful benchmarks for planning and evaluation.

The study of groups of people with a mental illness in an Area Health Service provides an opportunity to obtain valuable information concerning their treatment and support requirements. With the implementation of the National Mental Health Strategy (1992) there is a requirement to develop well-targeted treatment and rehabilitation programs grounded on evidence-based practice. As noted, the prior lack of consensus on fundamental issues such as diagnostic systems and measures of psychiatric disability has greatly impeded the capacity of individual mental health services to obtain accurate information concerning populations under treatment. This in turn has limited the opportunities to make accurate comparisons of psychiatric morbidity between area health services let alone evaluate the effectiveness of different types of treatment programs.

Manderscheid and Pirkis (1997) identified the need to develop a framework that disaggregates the population into subgroups by age, disability and diagnosis. Examples include adults with severe mental illness, adults with other mental illnesses, adults with risk factors, and remaining adults. The aim would be to develop formalised plans at area level to ensure that treatment and rehabilitation programs

adequately address the assessed needs of these groups. The Final Report of the Evaluation of the National Mental Health Strategy (1997) identified a deficiency of information as contributing to a number of key issues of concern at both a national, state and regional level. These included:

### **Service Gaps**

Even in areas where the range and level of services were substantially more developed than the Australian average, consumers and providers reported high levels of unmet need.

### **Limited Access to Acute Beds**

Despite the maintenance of acute bed levels over the period of the Strategy, it was frequently reported that access to acute care has reduced and premature discharges increased.

### **Community Services as Gatekeepers**

New community teams were valued where they provided care and treatment, but too often these new resources were seen as solely directed to filtering access to the hospital acute unit.

## **Inadequate Case Management Systems**

Both the national and local area consultations reported little improvement in continuity of care arrangements over the life of the first National Mental Health Plan with insufficient use of case managers to co-ordinate care.

## **Insufficient Emphasis on Rehabilitation and Personal Recovery**

Services that emphasise the 'person not the illness' were argued as necessary to achieve a balanced care system. Greater emphasis on the role of the specialised mental health 'non government sector' was advocated.

## **Undeveloped Special Needs Services**

The National Mental Health Strategy (1992) argued for improved planning to cater for special needs groups. A range of individuals have been identified as having special needs. These include children of people with mental illness, survivors of torture, trauma or child and sexual abuse, Aboriginals and Torres Strait Islander peoples, people from non English speaking backgrounds, people with dual disabilities and homeless youth.

A dilemma, however, is the inability to allocate resources at a national, state and Area level to ensure the best possible outcomes for special needs groups. The lack of information at the Area level has significantly contributed to this situation as little is often known about the populations under treatment let alone the levels of unmet need or new disorders emerging within the community. The need to address this area is increasingly motivated by health economics as it is by the desire to improve the health status of the population.

Andrews (1997) recognised the growing contribution of epidemiology to the study of populations and in particular the difference that its methods can make to the planning and management of health services and the improvement of health care in general. Similarly, Weiss (1986) observed that epidemiological research of treated populations allowed conclusions to be made as to who recovers, worsens, and develops complications. Inferences could also be drawn as to the particular characteristics of a patient or the aspects of care which were responsible for these differences in outcomes. Another way of expressing this is that Area mental health services need to fully understand the nature of their work in order to recognise strengths and program weaknesses.

These observations are implicit in Morris' (1964) description of the uses of epidemiology. Armstrong (1992) argued that as a public health science epidemiology had a major role to play in the provision of health services and considered the key

elements of research policy formulation, planning and program development, program delivery and evaluation as pivotal.

Given the conclusions reached in evaluating the National Mental Health Strategy (1992) how well do area health services utilise epidemiological approaches for the identification of priority populations, resource allocation and outcome evaluation?

One large rural mental health service will be critically evaluated and recommendations made to improve the planning, resource allocation and process as part of an organisational development approach to improving outcomes for mentally ill people.

## MORRIS' MAJOR USES OF EPIDEMIOLOGY

These may be summarised as:

- To study the history of the health of populations and the rise and fall of diseases and changes in their character
- To diagnose the health of the community and to measure the present dimensions of ill-health
- To define problems for community action, their relative importance and priority; to identify vulnerable groups needing special care
- To study the working of health services with a view to their improvement
- To estimate from the group experience what are the individual risks and chances, on average of disease, accident and defect
- To complete the clinical picture of chronic disease and describe its natural history

- To identify syndromes by describing the distribution, association and dissociation of clinical phenomena in populations
- To search for causes of health and disease.

All have direct relevance to mental health.



## MID WESTERN AREA HEALTH SERVICE - AN OVERVIEW

The Mid Western Area Health Service is located in the Central West of New South Wales, extending from Mount Victoria in the Blue Mountains to Lake Cargelligo in the West. The Area covers a diverse geographic area of 54,805 square kilometres with mountains on the eastern side, flat plains on the western side and two large rivers- the Macquarie and Lachlan dissecting the countryside. The rivers provide valuable water for domestic consumption, industry and crop irrigation. Rainfall is moderate and is more consistent on the eastern side of the Area where agriculture is more intensive. Parts of the Area have extremely rich agricultural land, producing wheat, fruit crops and vineyards. Sheep and cattle farming have historically been major enterprises. In recent years the Area has benefited from the introduction of open cut mining which has brought new employment to some areas while others have suffered due to the closure of coal mines due to a downturn in the industry. The 1990s drought and the fall in price of many rural commodities is affecting the long-term viability of family farming throughout the Area. The Mid Western Area Health Service Statistics Unit (1998) reported that agricultural production is valued at around \$600 million each year and manufacturing industry has a turnover of around \$970 million a year.

## **Transport**

The Area is crossed by the Mid Western, Mitchell, Great Western and Newell Highways. The Sydney-Broken Hill railway line traverses the region with daily train services to Sydney and flights available from the major centres of Orange and Bathurst. With rail services having been cut back considerably many residents outside these centres are now dependent on private motor vehicles.

## **Institutions**

The major institutions include University campuses at Bathurst and Orange, four Boarding schools and a correctional centre in Bathurst and one boarding school in Orange. There are also correctional centres in Lithgow, Oberon and Evans. The Aboriginal male population in the eastern sector peaks in the 20-24 age group which is thought to be due to the correctional centres in these areas.

## **Population Size**

The Australian Bureau of Statistics population estimates for the Mid Western Area Health Service is 171,366 people, comprising 85,437 males and 85,929 females in 1997. The population is slowly increasing in size with an increase of 2940 persons living in the Area compared to the 1991 Census. The eastern sector is

growing, the central sector is relatively stable and the western sector population is decreasing. The majority of people leaving the Area are young adults between the age of 15 and 24 years due to employment, education and economic/social reasons.

## **Population Size**

The Mid Western Area Health Service is one of eight rural health services in NSW. The Area is divided into three sectors, Eastern Central and Western and includes 13 local government areas. Most of the population is located in the major urban centres of Orange, Bathurst and Lithgow with the remainder dispersed throughout many small rural centres.

The crude birth rate is 14.8 per 1000 versus a NSW average of 12.8 per 1000. The death rate is 12 percent higher for men and 10 percent higher for women than the NSW average.

## **Socio-economic Factors**

The Area has a lower educational attainment compared with the rest of NSW with 63 percent of the population having no qualifications. The population has a lower average income compared with the rest of NSW. Approximately 71 percent of individual incomes were below \$500 per week and only 3.7 percent earned above

\$1000 a week. The closure of coal mines and factories in the Lithgow area during 1996 caused higher unemployment for that community.

There are 22,016 persons eligible to receive an aged pension and in 1996 there were 3425 sole parent pensions being paid. In the same year there were 6916 persons receiving the new start allowance and 1636 wives/carers pensions paid to residents of the Area. The population aged 65 years and over has increased dramatically in the past 25 years from 8.4 per cent in 1972 to 12.4 percent in 1996. The proportion of those aged over 65 years is expected to increase to 17.3 percent by 2021.

## **Health Status**

Standardised Mortality Rates (SMR) are higher than that of NSW generally. SMR's are higher for a number of conditions and diseases especially coronary heart disease and injuries. Perinatal mortality is markedly higher in the west of the Area. Leading causes of death are cardiovascular diseases (46 percent) neoplasms (23 percent), respiratory conditions (9 percent), injury/poisonings (6 percent) and digestive disorders (4 percent). In terms of potential years of life lost (PYLL) the leading causes are injury/poisoning (24 percent), cardiovascular disease (23 percent) and neoplasms (22 percent). Perinatal and premature mortality rates are markedly higher in Aboriginals/Torres Strait Islanders. Prevalence of risk and

lifestyle factors (eg, smoking, alcohol consumption, and physical activity) are fairly similar to those of the state proportion.

## **Service Utilisation**

In 1995/96 there were 52347 separations from hospital of residents of the Mid Western Area Health Service. Significantly utilisation varied across the Area with high Standardised Separation Rates for residents from many of the smaller district centres. The Standardised Separation Rate for NSW is set at 100, while the SSR for the Area is 114 denoting a significantly higher use of hospital services. Specifically the SSR's were higher for respiratory medicine, dentistry, ENT, gastroenterology, general medicine, general surgery, neurology and orthopaedics.

In 1996/97 there were 14,700 occasions of service recorded for community health services. The most common reasons for presenting were behavioural/mental problems, injury, nutrition, family/social/economic issues, musculoskeletal disorders and ill defined conditions.

## **Leading Causes of Death**

Ischaemic heart disease was the top category (55 percent) in the deaths occurring as a consequence of cardiovascular disease. This was followed by cerebrovascular

disease (22 percent). The next major cause of death was cancer. The leading site was cancer of the digestive organs, followed by respiratory organs, genitourinary organs and bone breast and skin. Within these subgroups lung cancer was the top site, followed by prostate, colon and breast for all persons. In men the leading cause was lung cancer, followed by prostate cancer and colon cancer. In women the sites of breast, lung and colon were the first three. As a whole premature mortality is higher among residents of the Area compared with the NSW population. In people aged 1-24 years the leading causes of deaths were injuries, perinatal deaths and congenital abnormalities. In the group 25-44 years old, injuries, cancers and cardiovascular disease were the top three causes of death. Cancer and cardiovascular disease were dominant in the 45-64 age group.

Potential Years of Life Lost (PYLL) before the age of 75 is a measure of premature mortality and emphasises diseases or conditions which cause death among younger people. The top cause was injury and poisoning, followed by cancers and cardiovascular diseases with the first three claiming about 69 percent of total PYLL. In the period 1985-94 the PYLL was 118,741 with the male PYLL 1.89 times higher than females.

## Disabling Conditions

At this time the Mid Western Area Health Service has little epidemiological information concerning the level of disablement arising from physical or mental illness. The only accurate information is derived from the Australian Bureau of Statistics, which identified that in 1996 there were 5167 support pensions. The precise causes of disablement, the extent and duration is not routinely available or reported by the Area's Statistics Unit.

## KEY REPORTING ROLE OF AREA PUBLIC HEALTH UNITS

Each Area Health Service in New South Wales has a Public Health Unit responsible for the monitoring and reporting of notifiable diseases to the central office of the state Department of Health. This information is aggregated to provide disease profiles and assist in the development of a capability for early detection of disease trends within the community. This monitoring and early identification process facilitates planning and decision making processes concerning the allocation of resources and delivery of services. Public Health Units have a wider role beyond the submission of statistics. This includes the study of interrelationships between phenomena involved in the causation of disease including known risk factors.

Public Health Units do not gather a wide range of socio-economic data on their populations of interest and depend primarily on area statistics units to provide this information. This is a practical relationship necessary for population disease profiling according to age, gender, socio-economic status and place of residence. The role of Public Health Units reflects the tradition of 'the old public health' which focussed primarily on the monitoring of the distribution and determinants of physical disease. This commenced with the reporting of infectious disease with known high mortality rates. Even though these have been substantially brought under control there is an ongoing requirement for surveillance due to the propensity for development of stronger strains of organisms and new outbreaks of disease.



This emphasis on organic disorders has detracted from the requirement to report on mental illnesses which were separated out and largely ignored from a wider public health reporting perspective. The other major source of information comes from the NSW Health Department Inpatient Statistical Collection. Through this system all patients admitted to public hospitals are classified according to their Diagnostic Related Group (DRG) and this information is reported to the Department of Health.

## PRIORITY TARGET POPULATIONS FOR AREA HEALTH SERVICES

The current NSW Mental Health Policy (1998) provides a framework for the development of Area Mental Health Services. It adopts a whole of life approach to mental health care delivery with access to services for those most seriously affected by mental illness. Specific conditions are not necessarily given higher priority than others with the emphasis placed on the level of acute and chronic disability. Ten priority populations are identified at the Area Health Service level:

- Children and young people
- Acute adult integrated care
- Longer term and extended care
- Older people
- Aboriginal and Torres Strait Islanders
- People from non-English speaking background
- People living in rural and remote areas
- Forensic populations
- People with a dual disorder
- Lesbian, gay and transgender communities

This spectrum recognises that mental illness may occur at any time throughout life.

While the policy does not prioritise specific conditions it makes reference to the

high level of disability caused by mental illness within population groups, which has been significantly underestimated in the past. Particular attention is paid to the impact of major depressive and related disorders. This policy direction needs to be interpreted and applied within each Area Health service in New South Wales. In terms of clinical response it requires Area mental health services to provide a specialist mental health response to any person with a mental illness at any time in their life. This response needs to be timely, accessible, evidence-based and delivered with empathy and compassion. Areas are required to allocate their resources in a manner that recognises the incidence and prevalence of mental illness and in accordance with the critically assessed needs of the local population. This requires a recognition of the populations most in need and the factors that will influence service delivery. The inner city area of Sydney for example has a high number of homeless mentally ill with specific requirements for mental health care and accommodation. The south-west of Sydney has a higher proportion of people from non-English speaking backgrounds, particularly Asia who also have needs for particular types of specialist services. Faster growing areas of New South Wales such as the western suburbs of Sydney have significantly larger numbers of young families and a growing need for child, adolescent and family mental health services. Rural and remote areas have been adversely affected by a range of socio-economic factors with high levels of unemployment, youth suicide and dual disorder. Many rural areas also have Aboriginal populations with a poor health status including higher levels of mortality and morbidity.

Complicating this picture are factors which will influence service delivery within individual areas. In rural and remote localities, distance and isolation separate consumers from treatment and rehabilitation services and highly specialised mental health services such as forensic or aged peoples services may not exist. Metropolitan services may struggle to cope with the demand due to the size of the catchment population. Most areas of the state also suffer from shortages to a varying extent of experienced mental health workers, particularly public sector psychiatrists. These factors influence access to services and outcomes. In interpreting the NSW Mental Health Policy each area health service needs to identify how well the needs of the population under treatment are being met, how these can be improved and at what cost. This form of evaluation may provide important information, assist in developing more effective and efficient services and provide useful guidance on the range and extent of future service requirements. There is no set formula for allocating resources to area mental health services in NSW but only broad guidelines. While the broad ingredients or components of comprehensive mental health services have been known for some time there is not a set of detailed specifications for their development. While benchmarks are established for certain types of mental health services such as the number of acute admission beds per 100, 000 population, number of community mental health workers etc. this provides little information about the populations under treatment, the outcomes of various interventions or ways of restructuring services for greater benefit.

Clinical managers require this information to effectively evaluate how well their services are meeting the needs of the community. It allows questions to be asked, issues identified and research and analysis conducted. With the increased emphasis on evidence-based care there is a growing requirement to ensure that systems of mental health care at the Area level comprise interventions of known effectiveness. This is irrespective of whether the service is provided in the community or an inpatient service.

It is only through this approach that the policy goals of the NSW Mental Health Policy (1998) can be met. These include a requirement to lessen the development and recurrence of mental illness through early intervention, to provide rehabilitation, and maintain people experiencing mental health problems in ways which provide an optimum quality of life. A further goal is to ensure fairness in resource allocation for mental health service provision in NSW. This applies to the statewide allocation of resources and inevitably to the allocation at the Area Health Service level.

## AREA MENTAL HEALTH SERVICES DATA COLLECTION

### Current Status

It is significant that at the Area Health Service level the amount of epidemiological information routinely collected on people with mental illness is so limited as to comprise only one small section in the Mid Western Area Health Service Annual Report (1998/99). This is not surprising given the low-level priority accorded to the collection of this information by the Commonwealth and State Governments prior to the implementation of the National Mental Health Strategy (1992). This paucity of information is remarkable if health and illness are conceptualised within a mind/body paradigm. Public Health Units and other general health services report a full range of physical conditions from cardiovascular disease to cancer and all the sub categories of disease. Yet the other component of the model, 'the mind', and the associated disorders have received little priority for epidemiological reporting purposes. The Mid Western Clinical Information and Casemix Unit relies entirely on the Inpatient Statistics Collection (ISC) for information on patient separations from inpatient services. This has already been noted as a limited reporting system, yet, it has become a key resource for making health planning decisions. There are eight sections of the ISC, which are of limited relevance to mental health services. The reporting system was created with general hospital service reporting requirements in mind and is a 'poor fit' for psychiatry.

This was highlighted in the development of the Mental Health Classification and Service Costs Project (1998) which recognised the limitations of the ISC and attempted to create a casemix classification for specialised mental health services. It was recognised that the only standardised clinical data was ICD-CM codes in the acute inpatient setting and there were inconsistencies between sites in this data set, particularly in relation to the coding of intended same day patients. In the community and non-acute inpatient settings there were no standardised sets of patient data that could be peeled off patient information systems. The Mid Western Area Health Service has utilised the Computerised Record Individual Service Plan (CRISP) system for community mental health services as a tool to generate individual service plans. This system is not in universal use in New South Wales, does not link to the ISC and requires the creation and maintenance of a separate medical record with a different medical record number to that used for an inpatient file. At this time the only way to obtain aggregated clinical information is to audit files separately, making it time consuming and expensive to obtain data and evaluate patient outcomes. While this situation is unsatisfactory it is preferable to a number of other rural Area Health Services who depend on a pen and paper system for recording community mental health information. At this point in time neither the Mid Western Area Health Service or any equivalent rural Area health Service in New South Wales reports fully within the parameters of the national minimum data set for mental health. It is proposed by the New South Wales Health Department to implement a new community health information system

with a mental health module. This module will be interfaced with the ISC through a patient data linkage system. The development and implementation of this system will be incremental, requiring considerable refinement to ultimately meet the requirements of the Mental Health Classification and Service Costs project if fully implemented. Currently the ISC is therefore the primary source of official data for the Area, capable of providing the following information of mainly direct relevance to inpatient health services, and of minimal use to mental health services as a whole:

**Summary of Separations:** this provides basic information such as sex, age, place of residence.

**Top 20 AN-DRG:** based on Version 3 of the Australian National Diagnostic Related Groupings classification. The top 20 in relation to separations may be listed.

**AN-MDC:** the Australian National Major Diagnostic Classification. This is a grouping of all patients whereby Diagnostic Related Groups are separated into systems of the body.

**SRGs:** this is a clinical service categorisation developed by the New South Wales Department of Health. It is based on DRG classification and takes into account the



individual ICD9CM classification. Patients separated are included which can be used to illustrate the Area and individual hospital casemix.

**Principal Diagnosis Basic Tabulation:** this is a summary of the ICD9-CM codes recorded for Principal Diagnosis of every separated patient. Separations, bed days and average length of stay are included.

**External causes of injury and poisoning:** every injury, trauma, accident diagnosis (whether a principal or secondary diagnosis) requires an external cause code. These are particularly limited in psychiatry.

**Principal Diagnosis:** within ICD9-CM the Psychiatric Diagnosis Codes from 290-319 may be listed separately. Information can be provided on separations, bed days and average length of stay.

**Principal Procedure Basic Tabulation:** a summary of ICD9-CM codes with separations, bed days and average length of stay relating to procedures that have been coded in each separated patients medical record. The vast majority of procedures are relevant to physical medicine and there is not a standardised procedure list for psychiatry.

The major relevant procedures currently reported are:

- psychiatric somatotherapy, psychotherapy and counselling
- alcohol & drug rehabilitation and counselling
- social work assessment and counselling

### **Deficiencies in Information Systems for Population Groups**

Accurate information is the basis on which to plan and make decisions that will ensure optimum outcomes for consumers. Mid Western Area Health Service like all other health services in New South Wales has been handicapped by a lack of information. The mental health service is structured as a Division of Psychiatry with service streams based around population groups:

- younger people
- adults
- older people

Each stream has an inpatient and community team which targets the population of interest and provides a range of services from prevention and early intervention through to rehabilitation and disability reduction programs. It is not possible to easily determine the numbers treated in these settings or measure the outcomes

of care provided. There are no linkages between inpatient and community mental health settings that allows the rapid exchange of clinical information. This reflects on the ability of the Area to monitor standards, assess progress against performance indicators and report on activity to the Department of Health. There is currently no method for aligning diagnosis with presenting behaviours or predicting the demand for certain types of services based on analysis of trends.

There are no standardised measures of disability across service strands thereby making it difficult to assess current and likely demand for treatment and rehabilitation services. While it is possible to undertake one off projects to provide some of this information through retrospective studies it is both time consuming and expensive. The expectation is that this information should be routinely available to clinicians, planners and managers.

The increased reporting requirements of the National Mental Health Survey which is conducted annually and the new monthly reporting program for the New South Wales Health Department has highlighted the deficiencies in the Area's information systems. The latter requires the reporting on a monthly basis of specialised bed occupancy levels. This information must be tabulated manually which is laborious. It has highlighted the major difficulties that will be encountered in moving towards the development of a casemix classification system for mental health services. This will require the introduction of a range of feeder

systems to provide socio-economic, financial, clinical and service use data. The Mid Western Area is not unique in being unable to easily meet the expanding reporting requirements of the Department of Health. It is recognised that there are deficiencies in the information currently available, which seriously impedes planning, and resource allocation at several levels. This is further highlighted by the inability to routinely measure and evaluate outcomes of care in various specialised mental health settings. The Mental Health Classification and Service Costs Project (1998) measured clinical attributes of severity and level of functioning using the Health of the Nation Outcome Scale (HoNOS), the Abbreviated Life Skills Profile (LSP), the Resource Utilisation Groups (RUG-ADL), the Resident Classification Instrument, the Health of the Nation Outcome Scale for Children and Adolescents (HoNOSCA) and the Children's Global Assessment Scale (CGAS). The Mid Western Area has introduced the HoNOS and previously utilised the LSP which will be reintroduced at a later date. The MHCASC project recognised that the monitoring of clinical outcomes will assist in identifying effective programs and help shape service system requirements.

The implementation of the hitherto mentioned Mental Health Outcomes and Assessment Training Project (MH-OAT) will undoubtedly generate higher level clinical and outcomes data. This implementation, commencing in 2001 will take three years to complete and it is too soon to determine to what extent it will be accepted by clinicians.

# A HISTORY OF AREA HEALTH SERVICE DEVELOPMENT IN MENTAL HEALTH

## Overview

The development of mental health services in the Mid Western Area Health Service closely parallels the rest of the western world. Historically, the main focus of care has centred on Bloomfield Hospital at Orange. Once a hospital with almost 2000 inpatients it has now reduced to 130 acute and long-term residents. Bloomfield was constructed 75 years ago in response to overcrowding in the major psychiatric centres in Sydney. It was built to provide services to western New South Wales from the Blue Mountains to the borders with South Australia and Queensland.

In the early 1920's there was minimal emphasis on community mental health care. The concept of a new, large hospital designed in accordance with the best European traditions was politically attractive. The location in a 'healthy rural environment' was considered a positive factor due to the capacity to expand facilities over a large area and provide outdoor activities for patients. The hospital would also provide employment for local people and complement the development of general health services in western New South Wales.

The first patients were a mixed group and remained that way until after World War 11. Mentally ill, developmentally disabled, brain damaged, alcoholic and homeless patients all found a place. They were put to work (outdoor therapy) clearing virgin bushland to make way for hospital wards and other amenities. The type of patients cared for at Bloomfield was consistent with the mental health legislation (the Lunacy Act) of the time. Narrow definitions of mental illness were not in place, allowing patients with a wide range of conditions to be placed on a medium to long-term basis in psychiatric hospitals. This was regarded as humane treatment. A good patient was a good worker who was submissive. Patients were cared for in large wards often accommodating more than 140 individuals, most sleeping in dormitory accommodation.

The range of treatments available were limited. The emphasis was on work and the most able patients were assigned to work teams under the management of psychiatric attendants, the forerunners of mental health nurses. The range of medication to treat mental illness was limited to hypnotics and mild sedatives. Unmodified ECT was used to treat serious depression, some forms of schizophrenia and extreme violence. In the late 1920's states of unconsciousness deliberately brought about by large doses of insulin were first used.

There was little emphasis on measuring outcomes of care as expressed today in projects such as the Mental Health Classification and Service Costs Project (1998).

This is not meant to imply that there were not regular reviews of patients' condition. These were carried out on a weekly basis for patients in the acute admission areas and yearly for longer-term patients.

Until the early 1960's there was little emphasis on community psychiatry as the psychiatric hospital was the predominant focus of activity. Consequently there was little effort to routinely measure the outcomes of what community mental health care was undertaken. This situation persisted until the late 1980's when interest developed in developing a structured approach towards measuring psychiatric disability and outcomes of care. It took the advent of the National Mental Health Strategy (1992) to strongly focus attention on this requirement.

**Given these factors how closely does the Mid Western Area Health Service follow Morris' uses for epidemiology in psychiatry?**

## EVALUATION OF MORRIS' USES OF EPIDEMIOLOGY IN MID WESTERN AREA MENTAL HEALTH SERVICE

To study the history of the health of populations and the rise and fall of diseases and changes in their character (Morris' first use of epidemiology)

It is difficult to accurately describe the history of the mental health of the population of the Mid Western Area Health Service for a variety of reasons. This century there have been no reliable population studies conducted to identify a baseline of the mental health of the rural population or follow up studies to identify changes that may have occurred over time in response to a wide range of factors. Area Health Services have not had the expertise to conduct such research and have been largely reliant upon broad brush data from the New South Wales Health Department. Little attention was given to measuring the incidence or prevalence rates of various types of mental illness at an Area, national or state level. The emphasis was on providing treatment interventions once a condition had developed. Little was known concerning risk factors for the development of mental illness apart from those factors and events known to sometimes precipitate an acute episode of illness such as childbirth, excessive intake of drugs and alcohol, bereavement, organic brain damage from a range of causes and suicidal behaviour following a major life crisis. Access to public mental health care was also limited, particularly for the first half of this century due to issues of cost, poor public transport and a shortage of local services. It is likely that many people with mental



illness never reached specialised treatment services unless their behaviour became so disturbed that the community could no longer tolerate it. Quite high levels of abnormal behaviour were tolerated with most small communities having their fair share of 'eccentrics' who existed, often uncomfortably in or around towns and villages. Psychiatric patient hospital files from the 1920's will often detail long histories of unusual behaviour, usually tolerated until a serious episode of violence or self harm or in some cases the death of a long-term carer.

The fear of 'mental' hospitals was particularly evident in rural areas, a hangover from the 19th century concepts of lunacy and incarceration. This translated to a high level of apprehension in seeking assistance for fear of the consequences of treatment. This reluctance and even shame to admit mental illness remains an important factor (possibly even more evident in rural areas) in impeding the study of the mental health of the population, the rise and fall of diseases and changes in their character. The majority of people with a mental illness in the Mid Western Area Health Service are seen by a general practitioner. This practice has existed since white people colonised the Central Tablelands of New South Wales. The treatment provided in the 19<sup>th</sup> Century would have been rudimentary given the limited understanding of mental illness and the lack of associated treatments.

There were no private psychiatrists in residence until after World War 11, leading to a total reliance on those public sector psychiatrists appointed to work at

Bloomfield Psychiatric Hospital at Orange. There was no requirement on general practitioners to report numbers of mentally ill people consulted or the nature of the disorders unless there was a basis for the condition in an infectious disease such as syphilis which could lead to General Paralysis of the Insane. This remains the situation today, as there is no legal requirement for general practitioners to provide clinical information to the New South Wales Health Department concerning the psychiatric status of their patients. Treatment data can be obtained through Medicare for all of New South Wales, but this cannot be routinely broken down for respective rural area health services.

The absence in the 19<sup>th</sup> and early 20<sup>th</sup> Century of a well-formulated system for the classification of psychiatric disorders exacerbated the situation. Conditions such as schizophrenia and manic depressive disorder were poorly understood let alone the anxiety based disorders which could lead to significant levels of illness and disability. This situation was made worse by the isolation of psychiatric services from the general health system. The psychiatric hospital system was administered by a separate division of the Health Commission, The Department of Mental Hospitals. This approach was based on well meaning intentions. It was considered essential that there be separate legislation and separate services for the mentally ill due to their vulnerability to neglect. This was an extension of the European system of care and as noted by Edwards (1968) led to the perpetuation of a system

where the mentally ill were stigmatised and psychiatry was regarded with suspicion by the rest of the medical profession.

The Mid Western Area Health Service was influenced by these factors. For these reasons it is impossible to accurately assess the mental health status of the population at any specific time. It is not possible to determine the impact on treatment services of socio-economic factors and the improvement of living standards for many rural communities following World War 1 and World War II. It is also not possible to fully gauge the impact of the rural recessions of the 20th Century although recent studies have demonstrated rapidly rising rates of suicide, particularly among young men.

The capacity to measure the history of the health of populations and the rise and fall of mental diseases and changes in their character is pivotal in identifying the factors within communities that cause psychiatric morbidity. The Mid Western Area Health Service can now provide a limited amount of clinical information on populations under treatment. This does not allow the estimation of the true incidence and prevalence of psychiatric illness, as the majority of people with a mental disorder do not receive treatment from specialised services. The Mid Western Area Health Service has an enormous amount of developmental work to undertake in obtaining and recording epidemiological information. It is only when

there is a reliable baseline that services will be able to record changes over time in the mental health status of the population.

To diagnose the ill-health of the community and to measure the present dimensions of ill-health; to define problems for community action, their relative importance and priority; to identify vulnerable groups needing special care. (Morris' second use of epidemiology)

At this time it is impossible to accurately assess the mental health status of the population of the Mid Western Area Health Service. It is not a simple process to obtain information from Medicare relating to the diagnoses of patients consulting general practitioners and private psychiatrists. None of this information is routinely available for analysis and planning of mental health services. Its accuracy in some cases is also questionable, particularly in respect to patients consulting non mental health professionals where there is no external requirement to provide a specific diagnosis over time therefore leading to broad descriptions such as 'anxiety', 'stress' or 'depression'.

The extent of history taking also varies widely. Detailed histories may be taken for patients consulting specialised services, but there is no mechanism to consolidate this information to identify risk factors, illness severity and factors that may be involved in the development of mental disorders at a particular time and a particular location which may be subject to particular economic stressors eg,

industry closures. *Caring for Mental Health* (1998) highlights the need for early diagnosis and intervention in a targeted fashion. This in itself is resource dependent.

**To measure the present dimensions of ill-health.**

The Mental Health Classification and Service Costs Project (1998) identified three important domains of diagnosis, clinical severity and level of functioning (disability).

The Mid Western Area Health Service does not routinely measure clinical severity and disability levels of patients. This situation is not unique to the Area and has been identified as a major priority for national action.

The importance of obtaining this information should not be underestimated, particularly since the MHCASC project demonstrated a poor correlation between diagnosis alone and resource utilisation. It is also not possible to accurately predict the outcome of treatment and rehabilitation based purely on a diagnosis. There is for example a wide variation in severity of schizophrenic symptoms among sufferers. Similarly there is a variation in terms of individual response to treatment. This is not only the case for schizophrenia but for all types of mental illness where the course, duration and severity of the condition may vary widely.

It is not possible at this time to measure the respective population dimensions of mental ill health within the regional community. It is acknowledged that certain types of mental illness are more prevalent at different times in the life span and this may be influenced by a wide range of socio-economic factors including level of educational status and income. Access to prevention and early intervention services is also limited in rural communities with the consequence that some disorders will not be detected until they become acutely evident. By this time the level of disability associated with the condition may be much higher than if detected and treated earlier. When taken across the Area population this raises an important question. Even if there are standardised incidence and prevalence rates for certain conditions (eg, schizophrenia will effect 1 percent of the population) it does not necessarily correlate that the severity of the presentations and the level of disability will be the same across all health Areas in New South Wales. This is increasingly dependent upon early access to treatment services. The introduction of early identification programs with the aim of detecting psychosis early in the course of the condition is testament to the increasing emphasis being placed on the early recognition of mental illness. Another example is the development of School Link Projects, partnerships between the New South Wales Health Department and the Department of Education with the specific intent of detecting early onset mental illness in young people. Mental illnesses including anxiety based conditions require complex psychotherapeutic and pharmacological interventions. The absence of public mental health services and private services in rural New South Wales

places these communities at a disadvantage for receiving optimal treatment in the early stages of illness. Glover et al (1999) studied the range in prevalence of mental health problems and care in the United Kingdom. Significantly, it was found that among English health authority areas the most morbid have about twice the prevalence of primary care mental illness as the least morbid. Depression is recognised as a growing public health problem not only in rural areas but generally. The onset of depression may be influenced by a range of environmental and biological factors. The question must be asked is depression more prevalent in rural communities which have been devastated by the dual impact of economic rationalism and rural recession? Is depression as well recognised in rural areas and is it treated appropriately when diagnosed?

There is a serious shortage of mental health services for children and adolescents. What is the incidence and prevalence rates of mental disorders among children and adolescents and what are the associated acuity and disability levels? It is impossible in the Mid Western Area to obtain epidemiological data to draw meaningful conclusions concerning many of these questions. The technical difficulties associated with ensuring the accuracy of epidemiological and clinical information is significant as many mental health staff have not been trained in the use of standardised assessment scales. Measurement for the most part becomes a matter of professional discretion. It is difficult therefore to obtain accurate information leading to an almost total reliance on extracting information manually

which is time consuming and potentially of little value due to the problems of inter-rater reliability and an inherent lack of capacity to aggregate what data is available. For this reason emphasis is placed on the ABS Survey of National Mental Health and Well Being (1997) which at least provides valuable Australia-wide data.

**To define problems for community action, their relative importance and priority.**

In view of the problems associated with the collection and interpretation of epidemiological data greater reliance is placed on what information can be obtained from the NSW Health Department. This is obtained from national and international epidemiological studies. Area Services may not be developed and delivered in accordance with locally assessed priorities but more in response to what are considered to be international priorities. This is a long way from the objectives of the National Mental Health Strategy (1992) which recognised the need to utilise the best available local and international information. It is significant that the next Strategic Plan for Mental Health Services in the Mid Western Area Health Service will be largely reliant upon centrally mandated planning guidelines provided by the New South Wales Department of Health.

It is possible to identify the types of mental health services required, but only in the broadest possible terms. Examples include the need for treatment and



rehabilitation services for people with chronic mental illness and crisis services for people with acute mental illness. This specifies the service type, but little about the service demand and epidemiological characteristics of the populations under treatment. There is not a systematic method for collecting this information over time and analysing it with a view to defining the characteristics of the treated populations and identifying factors that predispose these individuals to illness. Fanning (1997) concluded it was not possible to accurately determine how many women had been treated for post-natal depression in the Area during the last 12 months. It was not a simple task to obtain this information from the mental health service, let alone primary health care and community health practitioners. While many of the factors contributing to the development of post-natal depression are well known there was no system to obtain, aggregate and analyse information concerning the local population. Questions arise that cannot be answered concerning the incidence of the condition, precipitating and predisposing factors and the socio-demographics of the populations treated. There is also little opportunity to conduct follow-up studies to determine medium and long-term response to treatment. While post-natal depression has been cited it is only one example of a clinical condition where there is a lack of reliable information. On a wider basis there is an urgent requirement to better understand a wide range of issues relating to Aboriginal mental health, people living in isolated areas, and the mental health of younger men.

To study the working of health services with a view to their improvement.  
(Morris' third use of epidemiology).

Mental Health Services in the Mid Western Area Health Service are funded to provide assessment, treatment and rehabilitation services to the catchment population. Rawson (1992) identified a number of ways in which descriptive epidemiology can assist health service planning and administration.

As noted, the identification of service needs within the Mid Western Area Health Service is incomplete. The paucity of data for specific population groups prevents the adoption of a more proactive treatment focus. This limits the capacity of local management to set planning objectives and target priority conditions. This in consequence limits the confidence with which resources can be allocated towards meeting certain objectives. It is also difficult for management to determine the scale of provision required, including the number of acute admission and rehabilitation beds. A further deficiency is the inability of management to argue for the allocation of additional resources to address a problem when it is not possible to accurately identify the extent of the problem. Given the increasing reliance within the health care industry on reliable clinical information it has become imperative to establish procedures and processes to increase the amount and reliability of information available to management.

Descriptive epidemiology has an important role to play in monitoring the levels of mental illness. This traditional surveillance function is well recognised within Public Health Units as a means of identifying variations in the incidence and prevalence rates of physical illness. It is only in the last few years that information has been routinely collected on a limited set of mental health clinical indicators which provide basic information to administration and clinicians on the effectiveness and level of utilisation of certain types of mental health services. The reasons for the tardiness is again due to the difficulty in obtaining accurate. This is slowly being overcome. An example is the establishment of a clinical indicator to identify how rapidly clients with their first episode of psychosis are seen by the mental health system. This requires all staff of the Area Mental Health Service to notify new cases of psychosis and the first point of clinical contact. This information is invaluable to management for several reasons. It allows the estimation of new episodes of psychosis and provides some information concerning the outcomes of early diagnosis and treatment approaches. This has a number of other spin off benefits, including the development of a capacity to provide staff with information concerning the strengths and weaknesses of treatment systems. This feedback is important in engendering motivation and facilitating the revision of service models to ensure improved outcomes.

Within the Mid Western Area Health Service it is not possible to adequately assess the cost and effectiveness of treatment services. While service wide information

is available such as the overall cost of inpatient services and community mental health services it is not possible to determine accurately the cost of specific treatment and rehabilitation programs for individual patients. There is no mechanism to provide evidence of the cost and effectiveness of different approaches in preventing or reducing the cost of mental illness. This makes any type of program budgeting/marginal analysis very difficult. For managers this is a major problem due to the need to allocate resources where they can be used with the greatest benefit to the community. Similarly there is no way to identify across all types of services and treatment programs the attainment or non-attainment of objectives, quantification of undesired side effects or unanticipated beneficial spin-offs.

The requirement for valid data to identify needs, prioritise service development, guide the allocation of resources and evaluate outcomes of treatment programs has never been greater. Administrators within the Mid Western Area Mental Health Service are handicapped in respect to a prerequisite knowledge of the epidemiology of mental illness within the catchment population it serves and the impact of existing treatment services. In practical terms this requires administrators to be constantly reacting to new challenges and situations rather than being in a position to act proactively through approaches based on best evidence-based prevention and early intervention.

Since 1992 admissions to the acute psychiatric inpatient unit at Bloomfield Hospital have doubled. Both clinicians and administrators have had to manage this situation without a clear understanding of the reasons for this increase. Due to the absence of funding for research there is little opportunity to explore the reasons for such a dramatic increase in admissions. From a management point of view this is unacceptable for a number of reasons. The rise in activity has placed significant pressure on the mental health budget for the service, strained the clinical resources of staff and led to congestion within treatment services. While a number of reasons for the surge in admissions have been proposed none have been independently researched. There is an imperative for this to occur at several levels. The increase has been seen across the board in the adult population, in younger people and even children. There may well be different epidemiological factors operating for each group. A number of questions arise for the service. Is it possible to analyse the populations in care to assess the potential for screening techniques? Are these patients coming from particular locations within the catchment where there may be specific factors operating that are predisposing to the higher admission rate? It should be noted that the catchment comprises almost two thirds of the geographical area of New South Wales. Are increased referral rates due to other factors such as lack of alternative services, socioeconomic downturn with resulting mental health problems?

The Australian Health Ministers Advisory Committee Mental Health Working Group (1997) noted that in common with physical illness and injury, people who are socioeconomically disadvantaged, indigenous Australians and members of some immigrant groups experience greater levels of mental ill health and distress. From an administrative viewpoint it is essential to understand how this impacts on the public mental health service in rural areas. The South Western Sydney Area Health Service (1999) recently observed that its population had higher levels of social disadvantage and consequently a higher proportion of the population at risk of, or experiencing, mental health problems and mental disorders. From a rural mental health service viewpoint similar or higher levels of social disadvantage combined with an absence of private and public mental health services, and poor transport systems requires a different approach to the organisation, delivery and administration of mental health services.

There are no best evidence-based models of rural mental health service provision. In rural New South Wales Area mental health services are administered along different lines which influences the way information is collected. In the Mid Western Area a Division of Psychiatry is administered by an Area Director of Mental Health Services with formal line authority over all staff and mental health resources. In other rural areas there may not be a Director but a Program Manager who divides their time between mental health and other program areas such as drug and alcohol and geriatric services. In this situation the Program Manager may not

have line authority over mental health staff who instead report through another structure to generalist team leaders in community health and in the case of inpatient services to the manager of the local general hospital. The different models of management reflect a variation in the priority given to the management of mental health services which in turn may impact on resource allocation and prioritisation. In other words mental health services may suffer due to a lack of advocacy. The counter argument exists that irrespective of the system of administration that there should be a general acceptance of and adherence to set reporting processes. This, however, is not the case.

This is reflected in the range and type of mental health services provided with some rural areas offering a more comprehensive range of mental health services than others. It is easier to obtain current clinical information through a Division of Psychiatry model. In a less centralised model of administration the priority given to the standardisation of data collection may be significantly reduced as mental health is regarded as being only one of a number of clinical programs for which a health service manager may be responsible. Information is collected through multiple sites and medical records departments whereas in a divisional system there is one point of collection for all information, both inpatient and community. This same argument can be made for administrative accountability. In a disseminated management system the responsibility is shared whereas in a divisional model it is the Area Director who is ultimately singularly accountable for the operation of the

mental health service. A lack of information to plan, resource and administer mental health services may be as much a consequence of the management system in place as the absence of an agreed data collection system.

The South Western Sydney Strategic Plan for Mental Health Promotion (1999) noted that in order to enhance the mental health of the population it was essential to have in place quality assurance and administrative processes that were fundamental to effective health service provision. A key part of this was to ensure that the treatment services in place were providing best evidence-based approaches to the care of specific population groups. These in turn required regular evaluation through the routine collection and analysis of patient information.

Clinical managers have the responsibility to closely monitor the implementation of such approaches. Similarly there is an imperative to prioritise program implementation in accordance with state and locally assessed priorities. This may require the allocation of resources for capacity building to ensure the implementation process is realistic and sustainable.

Epidemiological studies are a useful way of monitoring the effectiveness of particular interventions and identifying those areas where a greater concentration of resources and clinical effort is required. These measures need to be adequately



supported by administrative action, accorded a high priority and not relegated to a lower level in favour of other measures which have been mandated purely on the basis of historical developments. Epidemiology has an enormous amount to contribute to the effective administration of mental health services through identifying priorities, where resources need to be allocated and by monitoring the outcomes of interventions over time. This must be viewed as a dynamic process, a key part of a quality assurance cycle for the mental health service with the expressed aim of meeting the needs of the population under treatment and those likely to enter care.

**To estimate from the group experience what are the individual risks and chances, on average, of disease, accident and defect. (Morris' fourth use of epidemiology).**

It has been noted that there are many groups within the community who are more at risk of developing mental illness than others. An awareness of the epidemiology of various mental disorders is important to predict where future demand will arise to assist in the development and organisation of services. Epidemiological studies also help in clarifying the true prevalence and incidence of mental disorders, rather than the numbers of people reaching treatment services. It is not possible at the Area level to accurately identify all the population groups who are at greater risk

of developing mental illness. This must be extrapolated from wider epidemiological studies which have already been noted to be limited in number and relevance.

To complete the clinical picture of chronic disease, and describe its natural history. (Morris' fifth use of epidemiology).

Epidemiology is helping to complete the clinical picture of chronic disease. Given the predictions by the World Health Organisation (1996) that disability from mental illness will continue to grow at an alarming rate it is essential to recognise how this is manifested and the implications. Due to the tendency to concentrate primarily on the management of the acute episode of mental illness many consumers have never received adequate recognition of their need for rehabilitation. The Mid Western Area Health Service is no exception in this respect. Insufficient attention has been given to the impact of chronic mental illness, the impact on carers and the wider community.

Historically the label 'chronic' tended to be synonymous with a connotation of a patient being untreatable and requiring long-term care. It also denoted the persistence of symptoms that seriously impaired the patient from functioning at a optimum level. Even more importantly the term 'chronic' also implied a poorer prognosis. During the period of institutionalisation of patients with a long-term mental illness there was little effort to differentiate systematically what the term

'chronic' meant for different patients. This was also the case for diagnosis and reflected the fact that mental illness was poorly understood. It was not unusual to see patients whose primary condition was due to organic brain syndromes cared for in much the same way as patients with schizophrenic illnesses. The long stay wards in most psychiatric hospitals were full of 'chronic' patients whose illnesses stemmed from everything from alcoholism and sexually transmitted diseases (General Paralysis of the Insane) to 'war neurosis'. What they had in common was a shared community view that they needed to be cared for. There was a moral duty to provide care and protection. Within long stay wards there were 'good' patients, those considered to be more able and often more compliant than others. These patients usually received more favourable treatment than others, yet they were still 'chronic' and often remained so for decades until the advent of deinstitutionalisation processes in the late 1960's. At that time in the Mid Western Area Health Service hundreds of patients moved into the community into supported housing provided by the charities, most notably the Saint Vincent de Paul Society and were supported by a small group of volunteers and community mental health nurses. It was a surprise to many that despite a long history of institutionalisation that the majority of these patients not only survived but enjoyed living in community life even when that meant sharing relatively poor accommodation. Murphy (1991) observed a similar situation in the United Kingdom where deinstitutionalised patients follow-up in a number of studies showed improvements in social behaviour and independence.

There was never any attempt within the Mid Western Area to routinely assess the disability levels of Bloomfield patients and the change in these levels after varying periods of time within the community. It is not clear what can be read into this remarkable episode. What is known is that many patients with histories of serious mental illness were able to readjust to community life despite many years of institutionalisation and their reassimilation was carried out by relatively untrained volunteers working for charities who assisted in teaching the activities of daily living.

While the New South Wales Health Department has placed increasing reliance on the measurement of impairment, disability and handicap as a result of mental illness, all Area Health Services in New South Wales have been slow to standardise assessment processes. The World Health Organisation (1994) identified through the classification of impairment, disabilities and handicaps (ICIDH) that it was essential to develop a sound working knowledge of these areas due to their relevance to clinical assessment, research and management. It was also recognised that the information which could be provided was invaluable for the planning of services such as community care, social security and rehabilitation. It was also noted that the diagnosis of a mental illness did not necessarily mean a bleak future with little prospect of improvement and a better quality of life.

The ICIDH provides a way of describing consequences of mental illness at three levels. While it has been noted that there have been particular problems in refining the use of the classification system in mental health it is nonetheless accepted that the use of the ICIDH can provide a multidimensional model for collecting information about individuals and populations in treatment. Within the Mid Western Area Health Service there has not been a consistent approach to describing the disabling effects of mental illness in this way. While it is correct that the majority of patients will leave hospital and return to the community after an episode of mental illness there has been little emphasis placed on assessing the wider implications for the individual and their family. This raises a host of questions that cross gender, age, and occupational group. Follow-up studies are not carried out for example to determine how many individuals have difficulty in coping with their work responsibilities after an episode of major depression. Similarly little is known of the short, medium and long-term difficulties in role readjustment, including adequate consideration of the variation from individual to individual. This raises another question concerning the factors that will predispose to a better prognosis, the need to incorporate these in care planning and program development. Rehabilitation in its broadest context should cover all these areas. In reality community case managers tend to spend little time on assessing and then addressing the issues that arise from psychiatric impairment, disability and handicap. In part this is a philosophical and educational problem where the emphasis is on acute management and the relieving of acutely distressing symptoms. In 1998 the Mid

Western Area Health Service commenced an educational program for consumers and carers looking at ways of improving the understanding of mental illness and associated disability. This was equally an educational process for mental health workers to achieve a better understanding of the ways in which mental illness affects families.

It has become apparent that too little emphasis has been placed on the assessment of chronic mental illness and the role and philosophy of rehabilitation services. While this is the situation for adults it is also important to note that it is further complicated for particular sub-groups such as children and adolescents and people of non-English speaking backgrounds. This is particularly the case for aboriginal people where there is not a clear understanding of how the development of a mental illness impacts on the individual and the community. As there is a substantial proportion of young people and aboriginals seeking treatment within mainstream community mental health services in the Mid Western Area Health Service it is vital to gain a greater appreciation of the extent and impact of chronic illness, and what rehabilitation interventions can be employed most usefully in a rural setting to reduce the associated disablement. At this time while many individual case workers may have an appreciation of the issues in the Area Health Service there is no core body of knowledge concerning rehabilitation to guide the practice of mental health workers generally.

To identify syndromes by describing the distribution, association and dissociation of clinical phenomena in populations. (Morris' sixth use of epidemiology).

To adequately address this area a high level of monitoring of populations in treatment is required which has been acknowledged as deficient. There is clinical information available concerning people being treated within the Mid Western Area Mental Health Service that is not routinely collated for analysis. Yet it is only through the collection and analysis of this information in a standardised fashion that conclusions can be drawn concerning the distribution, association and dissociation of clinical phenomena within the community. The benefits would include the development over time of a clearer appreciation of the mental health of the community and an understanding of the benefits of treatment and rehabilitation. In some situations it should also be possible to elicit a clearer understanding of the aetiology of mental illness including the association and dissociation of variables.

While there has been a clear recognition of the need to collect and analyse clinical information there have been a number of systemic obstacles.

## What to Collect

There has been indecision in the Area concerning what clinical information should be collected given the uncertainty concerning the validity and inconsistent use of the instruments to be used in the assessment processes. Without an agreed Area Health Service minimum data set, mental health staff could spend an enormous amount of time and money collecting information of little real value. Information collected should also complement state and national reporting requirements. There is no better way to create frustration among professional staff than to have them collect information which is rarely looked at and appears to have little relevance to the way that mental health services operates.

The Mid Western Area Mental Health Service provides acute admission service to almost two thirds of the geographical area of New South Wales. Due to the vast distances and a widely dispersed population living in major rural cities through to tiny villages and remote properties, the patients referred for admission come from differing cultures and backgrounds. Their livelihood may depend on anything from farming to mining, light industry or public sector employment. Many of these communities have been devastated over the last decade due to economic factors relating to rural recession, drought and bush fires. During this period many of the young people have relocated to large rural communities and the coast where there is more work, training and educational opportunities. This has left an ageing



population and an increased reliance on public sector services such as health and welfare which in turn have been reduced due to a lack of public funding and in some situations a difficulty in recruiting and retaining professionals. This is also the case with mental health professionals who are in short supply in most rural areas. This shortage places greater reliance on overworked general practitioners. This creates clinical management as it often takes an emergency for someone to be referred for treatment to an inpatient service. It is extremely difficult to obtain a clear picture of the factors that influence the development of mental illness and the manner in which it is detected and managed. The absence of early diagnosis and treatment services may lead to higher levels of dual disorder with individuals falling back on alcohol and other substances. When this occurs within a culture of despair (high unemployment, low income, one parent families etc) and there are few opportunities to obtain professional help the scene is set for the development of higher levels of psychiatric morbidity. This has flow on effects into family systems. It is interesting to note that the burden often falls to women who must support their husbands and children during periods of economic hopelessness. This is manifested in a number of ways. Women will often make inquiries concerning treatment services in response to the unwillingness (or perhaps inability) of their partner to seek assistance. In this respect they must bear a double burden, that of relative poverty due to a decline in household income and the major concern that their partner is in a downward spiral often characterised by depression and substance abuse. This situation was recognised some years ago by the New South Wales Department of

Agriculture who established a support service for rural women. The bottom line, however, is that while recognition and the establishment of support networks is important it does not reduce the need for early diagnosis, treatment and rehabilitation. Similarly there are limits to what mental health services can do. Often the best solutions are to be found in nature (good climatic conditions) and socio-economic factors such as an upturn in commodities prices.

The need is paramount for mental health services to work with other agencies such as the Department of Agriculture and financial counselling services to pool information and other resources to achieve optimal outcomes.

The challenge exists to collect information that adequately describes the history of the development of mental disorder and in particular to highlight causative factors. While this is important in the development of individual service plans it also needs to be looked at in the context of large groups of patients to determine if particular disease patterns are emerging. These patterns may take a number of forms and need to be subjected to close scrutiny to determine their significance. Examples of these are evident within the Mid Western Area Health Service but they have not been studied in depth.

### Example 1:

Since 1992 admissions to the acute psychiatric inpatient unit at Bloomfield Hospital have doubled. This increase has been uniformly represented across admissions from the three Area Health Services which refer to the hospital. The rate of referrals has not increased abruptly but gradually with patient numbers increasing steadily from year to year. The major increase has been for patients classified as 'mentally disordered' under the Mental Health Act (1990). There is frequently clinical evidence of personality disorder with or without depression. These patients are often dual disordered (suffering from both a psychiatric condition and a substance abuse disorder). Precisely why the number of referrals of these types of patients is increasing is not known although there are a range of theories. Similarly since the 1990's the service has seen a steady increase in the number of patients referred with depressive disorders. Zyla (1998) observed this trend is also evident in the caseloads of community mental health staff who have noticed a steady increase in the numbers of patients meeting the clinical criteria to be diagnosed with personality disorders and depression. While there is a clear need to investigate the epidemiology behind these increased presentations there are major limitations to the capacity of the mental health service to do this even though there are obvious benefits. In the first instance the service struggles to cope with the increased demand for beds and staff thereby leaving little time to study the underlying reasons for the apparent increase in mental illness and referrals. This

type of epidemiological detective work also requires a high level of expertise and financial support which is not readily available in rural areas and perhaps symptomatic of the relatively low priority given to mental health despite the National Mental Health Strategy (1992). A complicating factor is the high turnover of clinical and senior administrative staff in mental health services in rural New South Wales. This is due in part to the enormous and unrelenting pressure. It works against the initiation and continuance of longitudinal epidemiological studies. The collective disadvantage of these factors is that the mental health service is always in a position of reacting and rarely able to take a proactive stand. At this time there is nothing to indicate that the increase in referrals has peaked and if World Health Organisation predictions are correct then the demand for mental health services will continue at pace well into the 21st Century.

#### **Example 2:**

Fanning, Hoskin and Pruskiak (1998) in a study of admissions to Bloomfield Hospital demonstrated that for the three year period July, 1994, to June, 1997, there was clear evidence of a Central Drift Factor. Specifically the study demonstrated that over the study period there were 1914 admissions to Bloomfield Hospital. Of these 73 admissions (comprising 66 individuals) remained resident in the Mid Western Area after discharge despite initially being residents of other health areas in New South Wales. Of the 73, females were responsible for 25 admissions and males for

48 admissions. Of these CDF patients, 11 were Aboriginal. The females had an average age of 37.2 years and the males 34.7 years. Diagnostically schizophrenia was the most often diagnosed condition followed by personality disorder. The significance of this study for service provision cannot be underestimated. It demonstrated that a large number of seriously ill and highly disabled patients were choosing to stay within the Mid Western Area Health Service following discharge from acute inpatient services. The cost of their treatment to the inpatient service, based on acute bed day costs was \$1,205,000 for the three year period. The cost of their ongoing community care was not calculated for the purpose of the study but would be significant. While this study was for a three year period it is likely that the Central Drift Factor has been occurring for many years. The reasons why certain patients choose to remain in the Area is not known, but may have something to do with the absence or relative shortage of treatment services in their own areas- a case of moving to where treatment and aftercare is available. Having identified the presence of the Central Drift Factor the study did not move to the next stage of identifying the specific reasons for retention. While patients have decided to remain residents of the health area the same applies for their carers. Anecdotally the reason given is the desire to maintain close contact with their relative and to achieve closer contact with treatment services which in turn points to the feelings of isolation among carers. Other reasons for patients remaining within the area may have something to do with a greater range of housing, full or

part-time employment. Again, however, this is conjecture and requires further study.

### **Example 3:**

A further study conducted by Fanning, Hoskin and Prusiak (1997) looked at patients with multiple readmissions to inpatient and residential rehabilitation services. Specifically the study identified patients with more than five readmissions over a two year period between July, 1994, and June, 1996. Data for the study was extracted from the Inpatient Statistical Collection and the community mental health patient data base (CRISP). The reason for the study was to identify high users of services, quantify the length of stay, and the main diagnostic groups from which patients were drawn. The study also looked for evidence of a Central Drift Factor, the presence of particular behaviours and stressors leading to readmissions and estimated the number of beds required to care for these clients.

The study found that for the two-year study period 39 clients were responsible for 421 admissions across the three facilities. This constituted almost 25 percent of all admissions to the services, indicating the high demand for service from the multiple admission client group. Significantly it was also found that 22 of the clients with more than five admissions had relocated from their home district to be residents of the area where the treatment service was located thereby

demonstrating the presence of a Central Drift Factor. Of the 39 clients identified there were 25 who had been admitted 6-10 times, 9 with 11-15 admissions, 4 with 16-20 admissions and 1 with 21-41 admissions. While a number of diagnostic groups were evident the most often diagnosed condition was schizophrenia with 49 percent of the clients being given this diagnosis. The study went further than the identification of the major diagnostic groups. It also identified pre-admission behaviours and symptoms that were most prominent within the group. Medication defaulting, hallucinations, delusions, aggression, breach of Community Treatment Order, alcohol and substance abuse, suicidality, relationship/social stressors, were identified. Of these medication defaulting, aggression, substance abuse, and suicidal behaviour were most prominent. In some patients more than one of these behaviours and symptoms was evident prior to readmission to the service. The significance of this finding is that it is not the presence of a diagnosis alone that justified the requirement for readmission, but rather the presence of certain behaviours often coexisting with specific symptoms that frequently led to the patient being identified as a risk to themselves or others. A thorough understanding of the inter-relationship of factors leading to readmission should assist in the development of future management plans for these patients. This in turn may reduce the readmission rate and hopefully improve the quality of life for patients and carers.

The higher rates of admissions for particular patients indicates the need for individualised community based treatment programs which may also be quite costly. Yet the combined length of stay of these patients and the associated cost may make this worthwhile. One possibility would be the development of a community based treatment service which provides assertive follow-up. Where patients have a history of drug defaulting and failure to participate in planned follow-up with their general practitioners and case managers it may be necessary to utilise community treatment orders on a longer-term basis to achieve a higher level of compliance. This sort of treatment service could be evaluated over time from a number of perspectives - impact on admission rates, level of control of acute symptomatology and psychiatric disability. Another important area for evaluation would involve carers who are frequently subject to extremely stressful situations due to the failure of their relative to engage in ongoing treatment.

Through studies such as these it is possible to gain an understanding of the distribution, association and dissociation of clinical phenomena within populations under treatment. The impact on service utilisation including cost of treatment may be derived and objective measurements of the outcome of treatment programs. While these examples have concentrated primarily on referrals to inpatient services there are many similar opportunities within community mental health services. As working relationships improve with primary health care practitioners it should be possible to obtain a greater appreciation of the extent and nature of



mental illness within the community and to identify opportunities for co-case management.

To search for causes of health and disease. (Morris' seventh use of epidemiology).

While the focus of this work is on an epidemiological approach to needs assessment and outcome evaluation for populations in treatment there is also the opportunity to identify causes of good mental health and disease. One useful method is through the analysis of 'cases' to identify aetiological factors. It is only through the study of a large number of 'cases' that hypotheses may be generated for further investigation. As noted, a large amount of information is collected each year on people who are treated for mental illness. While it is useful for assessment and diagnosis of individual patients the information is rarely analysed from a wider epidemiological viewpoint. This is a significant waste of potentially useful data due to the absence of standardised data collection systems. This has occurred for a number of reasons including the reliance on a seriously deficient manual system for data collection which limits the opportunities for collating and correlating group data. The mental health service often becomes aware of changes in illness patterns only when they become a major difficulty from a management point of view. Early identification relies on the astuteness of clinicians which while important should not be the sole basis for early detection. The capacity to identify causes of good

mental health is ultimately dependent upon being able to identify the very opposite. This allows the establishment of a public health agenda based on prevention and early intervention.

Reference was made earlier to the fact that admissions of people under the age of 18 years to the acute admission unit in the area have quadrupled over the last five years. The reasons for this are unclear and there has not been the opportunity to carry out a proper study. A brief look at the clinical information indicates that the admissions are due to a range of mental illnesses - schizophrenia, depression, severe behavioural disturbances. Referrals have come from throughout the area but it is not apparent why the dramatic increase has occurred. Several questions arise- is there an increase in the rate of mental illness or are mental health services identifying and attracting referrals that once would have gone elsewhere?

The challenge remains to identify those factors that predispose to the development of mental illness in the Mid Western Area Health Service. This raises a number of questions concerning the socio-demographics of the populations in treatment - age profiles, gender, educational background, employment status, financial position, place of origin etc. The area mental health service does not have a clear grasp of the health illness continuum as it applies to aboriginal people due to their reluctance to access mainstream mental health services. This can be due to a lack of trust and a genuine fear of treatment processes and hospitalisation,

particularly where it may lead to the involvement of other agencies such as the Department of Community Services. There is also the ever-present fear that mentally ill aboriginal people may be hospitalised for short and long-term care. This is a particular concern for the less urbanised aboriginal people who live in remote rural areas. Hospitalisation is not seen as being different to incarceration. The inability to engage aboriginal people makes it particularly difficult to understand the complex interplay of the biological, psychological, social and cultural factors that lead to the development of mental illness. This in turn makes it extremely difficult to develop effective prevention and early intervention programs. Similarly the reluctance to seek treatment often leads to critical situations where aboriginal people are brought to treatment services (usually by police) in a seriously ill state. This ultimately leads to much longer recovery times, the development of higher levels of disability and increased stigmatisation coming from within the aboriginal community. The failure of health services to come to terms with the causes of health and illness within indigenous people cannot be overstated. Epidemiological research has an enormous part to play in clarifying this picture but only when applied within a culturally relevant context. Much is to be learnt from the Aboriginal people themselves in this regard as the solutions are more likely to come from within rather than without. Similarly the causes of good physical and mental health should be looked at conjointly as both are interdependent. Undoubtedly the Mid Western Area Health Service has a long way to progress in this regard, a situation which also exists within other rural areas.

It is apparent that this particular use of epidemiology has been overlooked due to the emphasis on being a treatment orientated mental health service. Virtually all resources are directed to providing and maintaining an infrastructure which has the primary role of providing care. This function is vital and stretches the service to the maximum. There is no tradition of providing separate resources for epidemiological investigation and this needs to change if the mental health needs of the population are to be adequately served. A clearer understanding of the causes of health and illness also allows the more efficient allocation of resources.

The New South Wales Health Department has recently endorsed the implementation of Positive Parenting Programs (1996) which have been demonstrated to be evidence-based and effective prevention programs. The Mid Western Area Health Service has embraced this approach through the implementation of the Triple P Program which aims to provide parents with the necessary skills to raise their children. The long-term intent is to reduce the amount of mental disorder in children. Poor parenting skills have been identified as a significant cause of behavioural disorders in children. This may be complicated by a range of factors including sole parent families, high levels of unemployment, mental illness in one or both parents including drug and alcohol abuse. Access to effective parenting programs is also an issue for people in many isolated parts of the area. Itinerant lifestyles with continual disruption of schooling and social support systems may add to the stress, but are a fact of life for many families as

they travel between communities looking for work (following seasonal work on farms). This is not meant to suggest that all members of these groups will develop mental illness but simply that they are at greater risk. The need for preventive action is not exclusively the province of mental health services but also extends to other government departments - education, social security, community services etc.

One of the difficulties in searching for causes of mental illness is the multiplicity of disorders and multifactorial aetiologies. This conundrum will undoubtedly remain the subject of extensive scientific research for many years to come. Despite this, there remains many opportunities to recognise and take measures to offset known causes such as use of illicit substances, excessive intake of alcohol, brain damage due to motor vehicle and other accidents, child abuse, and the role of trauma in causing post traumatic stress syndromes. Similarly, while all 'at risk' populations cannot be identified it is important to institute prevention programs of known effectiveness with groups such as young men aged 14-29 who are at higher risk of suicide. It is also recognised that elderly people living with chronic pain are at risk of depression. It is important that primary care practitioners are aware of this possibility in order to effect early intervention.

## THE CONSEQUENCES OF FAILING TO ADOPT A EPIDEMIOLOGICAL APPROACH TO PLANNING, PRIORITY- SETTING AND RESOURCE ALLOCATION

Morris' (1964) model may be summarised into three broad uses for epidemiological research. These are looking for causes of health and disease, surveillance of health and disease and evaluation of various interventional measures. It is apparent that Area Health Services have failed to apply these uses to maximum advantage. There are dangers in allowing this situation to continue. The majority of mental health expenditure is directed to inpatient services and it is difficult to demonstrate value for money given relatively high readmission rates. The trend within medicine to evaluate current practice and implement evidence-based approaches makes the situation within mental health services parlous. The inability to explain with confidence the reasons for increasing referrals within the community and inpatient services can serve as a deterrent to the allocation of additional resources. This may be viewed as throwing money at a particular health problem with little understanding of the causes or a capacity to measure the outcomes of treatment approaches. There is an urgent need for epidemiological research to explain the variation between health sectors in treated incidence and prevalence rates. New South Wales Health Department data for 1998/99 demonstrates large variations inpatients being registered for treatment in similar size area. In part this comes down to the need for surveillance to identify the factors responsible for increased referral rates and to monitor those patients under treatment to assess the

effectiveness of treatment programs. While it is not appropriate to second guess research it is quite possible that high readmission rates of community patients is due to a lack of adequate treatment, rehabilitation and housing facilities. This situation is variable across the catchment area with some centres being better serviced than others. Monitoring and surveillance is required at several levels. In the first instance there needs to be monitoring of the population to identify more precisely numbers of new cases of mental illness and to investigate the aetiological factors. At the next level there is an urgent requirement to evaluate the interventional measures used with patients in treatment in order to gain a clear understanding of efficacy. This needs to be assessed from several points of view- the patient, the carer and the treatment team. Each expects different outcomes and this must be allowed for in assessing the impact of interventions.

Another factor from the area's viewpoint is the importance of epidemiological surveys and surveillance of general and high risk populations to generate sufficient numbers of affected and non-affected people to establish the role of confounding variables, demonstrate the strength of associations and propose causal inferences for further study. Kerr (1985) concluded that there were three vantage points for studying health and disease- the laboratory, the clinic and the community. The power of combining data from all three sources should not be underestimated. While the methodological issues are significant in mental health they are not

insurmountable and bring the clinician, the epidemiologist and the consumer closer together in attempting to understand the causes of mental illness.

Area Health Services have failed to capitalise on this situation. The Second National Mental Health Report (1998) noted that further work was required to build a better understanding of mental disorders in the community in order to guide future service development. The National Survey of Mental Health and Well Being (1998) has confirmed that large numbers of Australians with a mental disorder do not receive any form of treatment. Of those who receive treatment from mental health professionals and general practitioners the outcomes are not easily to discern. The question must be asked as to what impact the absence of specialised mental health professionals and general practitioners in rural and remote areas has on the local populations? Where do people turn for help and with what result?

### **Linking Need and Workforce Requirements**

Like most rural area health services the Mid Western Area Health Service is suffering from a growing shortage of mental health professionals, particularly psychiatrists and mental health nurses. The reasons for this are complex but include the unwillingness of psychiatrists to move from major coastal centres to work in rural areas and the absence of undergraduate training programs for mental health nurses. A number of initiatives have been taken within the area in an effort



to overcome this situation. These have had limited success and highlight the requirement to prioritise carefully where professional resources are deployed. Epidemiological studies can assist in this regard by identifying the populations with the highest requirement for clinical services. This reinforces the management axiom of ensuring that the best possible outcome is obtained for a given level of resources. The danger in this situation is that if community mental health needs for populations in treatment are not known and understood then entire groups may miss out on adequate care. An example of applied epidemiological research to meet this end is evident within one area mental health program. The Satellite Housing Integrated Program Service (SHIPS) is a specialised mental health service in the Mid Western Area that specialises in the community care of people with a serious mental illness. The majority of the patients treated by SHIPS have a diagnosis of schizophrenia. It has been recognised that the severity of symptoms and levels of disability of patients with schizophrenia vary widely requiring a highly individualised approach to care. In response to this SHIPS developed standardised methods for assessing patients to provide a clear indication of their support needs. Over time it has been possible to develop a classification system based on higher or lower levels of support. The highest level of support is provided in a core house where there are staff available 24 hours a day. The lowest level of support involves domiciliary visits on a monthly basis to check on the general welfare of patients who are living in their own accommodation. Between these two extremes there are other support levels which may vary from providing several staff visits a day to once

every two or three days. It is also recognised that patient support needs will change according to their mental state. It is usual for patients to move up and down the support requirement scale. A trend requiring further review is a 40 percent increase in referrals of patients with schizophrenia from outside the Area - perhaps another sign of central drift?

The assessment of populations in treatment can serve as a useful method for prediction of future requirements for workforce. By evaluating the current treatment systems and outcomes of care for patients with different types of mental disorder it becomes possible to draw conclusions regarding the likely future need for staff of various disciplines. This approach may be used for evaluating the requirements for adult care, aged care and child and adolescent services. The measurement of demand for services can be a useful baseline for future planning. This, however, is far from the reality. In the Mid Western Area Health Service current workforce utilisation patterns have not been monitored and contextualised within an overall workforce development plan. As a consequence it has become increasingly difficult to recruit experienced mental health nurses and allied health staff to work in a range of specialised mental health settings. This situation has exacerbated the seriousness of the situation caused by the shortage of psychiatrists. The failure to monitor workforce requirements has been a major omission. The practical consequences of this include a shortage of appropriately trained staff to conduct prevention, early intervention, assessment and treatment

programs. This must impact in a number of ways. Acutely ill patients who are not detected and treated in the early stages of illness, have a longer recovery time and often higher levels of associated disability. Once the acute phase of illness has passed a supported return to community living is extremely difficult in many rural areas due to the absence of trained community mental health staff. This throws the burden back on general practitioners who are usually not adequately trained to take over this responsibility and have major constraints on their time. Intensive case management in many rural areas is therefore a dream rather than a reality. Another group that feels the impact of this situation is the carers. The strain of caring for a mentally ill family member can take a heavy toll on carers mental health. Epidemiological studies can help in improving this situation in a number of ways. By identifying the numbers of people requiring care and the underlying patterns of mental illness within a community it is then possible to advocate for additional funding. Similarly by conducting well formulated studies of patients within treatment systems it becomes feasible to identify the factors influencing treatment outcomes. Perhaps where the Mid Western Area Health Service has failed is not so much through the absence of effort and a lack of resources but by failing to clearly identify the outcomes of this situation for patients and use it for the purpose of advocating strongly overtime for additional resources. Similarly there has been a failure to evaluate the outputs and outcomes of existing treatment services to determine if the resources that are available have been used in the most efficient manner. This is clearly an argument for the application of

Morris' (1964) uses of epidemiology. Information is the single most important element in advocating for change and for additional resources, particularly in a period when evidence-based approaches are required. While the methodological research issues surrounding this type of measurement are complex they are not insurmountable, particularly if evaluation and data collection is regarded as a routine part of service activities.

### **Implications for Training of Mental Health Staff**

The emphasis on evidence-based approaches to care has increased the requirement of training mental health staff to practice at the most proficient level. A clearer understanding of the epidemiology of mental illness is an important consideration in the development of educational and training programs at both an undergraduate and graduate level. During the 1980's the emphasis in care was on the treatment of people with a 'serious mental illness'. This was broadly defined as anyone suffering from a psychotic illness and excluded most of the anxiety based disorders. As a consequence mental health workers were trained to work with patients who mainly suffered from schizophrenia and affective disorders. During the 1990's the pendulum shifted and patients without psychotic disorders were increasingly seen as being potentially 'seriously mentally ill'. The introduction of a new classification of a mentally disordered patient into the Mental Health Act (1990) strengthened this trend. This new legal classification allowed people without

a serious mental illness, but rather a mental disorder to be admitted involuntarily and treated. At a national and international level the impact of many anxiety based mental illnesses are increasingly recognised in terms of the amount of human suffering and disability caused.

As a consequence of the earlier focus on patients with psychotic conditions many mental health workers were not equipped by education, training and experience to manage a wider range of anxiety-based conditions. The extent of this morbidity within the Mid Western Area Health Service was not recognised until patient numbers began to increase dramatically, particularly to community based mental health services. It was evident that mental health workers required significant retraining and skills updating. To this extent the workforce requirements for education needs to come from an assessment of the type, range and volume of clinical work. This bottom up approach is more likely to meet the needs of the community than a top down approach to education which is highly prescriptive and may not necessarily prepare mental health workers for clinical practice in rural areas. In the Mid Western Area this has been addressed to a certain extent by the development of a post-graduate training program which focuses on the acquisition of skills which may be applied in response to the type of clinical work encountered.

## The Neglect of High Risk Populations

The New South Wales Health Department recognised in the Richmond Report (1982) that there were certain population groups at higher risk for the development of mental illness. In the new mental health policy framework 'Caring for Mental Health' (1998) a number of high risk groups are identified. These include aboriginal and Torres Strait Islanders, People of non-English speaking Backgrounds, gay and lesbian people and people living in rural and remote areas of New South Wales. It is significant, however, that it took the report of the Federal Human Rights Commissioner (1996) to create sufficient concern for New South Wales Area Health Services to implement measures to improve the plight of these groups. With respect to Aboriginal people it required a Royal Commission into Aboriginal Deaths in Custody to highlight the extent of disarray. These reports demonstrated higher rates of mental illness, including suicide among these populations. As a consequence the Mid Western Area Health Service has moved to address the mental health needs of these populations in a more targeted fashion. This includes a number of initiatives such as the appointment of specialised aboriginal mental health workers to provide care to aboriginal communities.

The new workers were enrolled in an indigenous mental health worker training program and mentored by experienced mental health staff. A system was introduced to monitor the number of suicides and attempted suicides for all people

living in rural areas. This produced information from across the area health service and it was possible to identify a wide range of background information, including gender, history of mental illness, employment status, previous contact with the health service etc. Using this information the area implemented a special project called the Rural Youth Suicide Initiative where experienced mental health workers commenced health education and public awareness programs within six small regional centres where there were particularly high levels of suicide and attempted suicide. The emphasis was on identifying causal factors and generating a community wide response to addressing these issues. Particular attention was given to educating general practitioners, school teachers and youth workers to recognise the early signs of depression. It is still too early in the course of the project to evaluate the project outcomes. The important point is that it was an initiative that grew from a recognition of the risk factors and casual relationships leading to an increase in suicidal behaviour among young people, particularly males living in rural areas.

As mentioned previously, another mental health disorder has become more clearly evident based on epidemiological investigation and feedback from clinicians. This relates to the level of dual disorder within rural communities - people who have both a mental disorder and coexisting dependency on drugs and alcohol. While there has long been a recognition that a substantial proportion of individuals suffer from dual disorder the true extent only became evident when a survey of patients in care

in the Area Health Service was undertaken for the period July, 1995, to June, 1996. This study was conducted retrospectively by auditing the files of all clients admitted to Bloomfield Hospital or seen by the community mental health service for that period. It indicated that almost 24 percent of all admissions to the acute inpatient unit suffered from dual disorder. This figure was probably less than the actual rate as many patients are reluctant for legal reasons to identify a history of illicit substance abuse. Among the inpatient admissions it was significant that many had used a range of substances (poly abuse) while the minority had restricted their use to one substance such as amphetamines or marijuana. Within the community mental health service the picture was similar although the rates of reported use of substances was much higher. Of particular concern was a finding that the majority of patients in a community mental health program (SHIPs) that almost exclusively treats people with a history of schizophrenia also had a secondary diagnosis of substance abuse. This points to very high levels of illicit usage among people with schizophrenia. It is not clear for what reason this occurs but perhaps it may be regarded as a form of self-medication to relieve distressing symptoms.

These findings have had significant implications for the mental health service. It has raised the index of suspicion for all patients entering treatment that their condition may be aggravated by the use of drugs and alcohol. This reinforces the importance in taking a clinical history that covers previous drug taking. It also



raises the need to undertake more research to identify if there are particular groups at risk of developing co-morbidity. A study by Fowler et al (1998) in the Hunter Area Health Service investigated the prevalence of substance use in a community outpatient clinic for people with schizophrenia. One hundred and ninety four outpatients were assessed using a structured interview, standardised rating scales, urine drug screens and case manager assessments. The study found that lifetime prevalence rates for schizophrenia and substance use to be 59.8 percent and the six month prevalence to be 26.8 percent. In another study the National Drug and Alcohol Research Centre (1990) examined the prevalence rate of psychiatric disorders in a sample of 270 methadone maintenance clients from three separate non-government clinics in Sydney. They reported significantly higher lifetime rates of depression, anxiety/panic disorders, social phobia and antisocial personality compared to the general population.

The findings of the Mid Western Area Health Service study and the Hunter study have important implications for the types of services required, the prevention and early intervention programs needing to be instituted. There are many opportunities to conduct similar sorts of research to inform the level of service provision, outcome evaluation and resource allocation. This needs to be done at the area level in order to gain a greater understanding of the precise nature of mental illness affecting the community and to derive appropriate local responses. This is not to ignore the importance of other national and international studies, which provide

useful epidemiological information for health service planners and administrators. These, however, need to be considered against the context of local circumstances, which may vary widely from Area to Area.

## **Evaluation of the Outcomes of Treatment Programs**

Until 2001, there was no mandatory system for the evaluation of health outcomes for patients under treatment in the Mid Western Area Mental Health Service, and this is beginning to gradually change as part of a state-wide process. This situation is not unique to the Area and a similar situation may be found throughout New South Wales. The current treatment system is based on an individual case management in inpatient and community mental health service settings. In the former the patient is allocated a case manager and a treating psychiatrist. Other mental health staff may be used as consultants in the development of a treatment and rehabilitation program. Goals for the patient are established early in the admission process and reviewed throughout admission. Progress is measured in terms of relief of distressing symptoms and improvement in self-care and insight. This assessment process is supported by staff observations and periodic reassessments by the consultant psychiatrist. The case conference system is an excellent way of obtaining input from a range of mental health staff but is not routinely supported by a formal assessment process such as the use of reliable clinical instruments which measure the level of symptoms and other changes in the

patient's condition. The exception is for patients on the Clozapine program where a baseline is established using standardised assessment tools and the patient is progressively reassessed against this baseline.

In community settings the patient is also allocated a case manager and may also have a consultant psychiatrist. More often the patient will be referred back to their general practitioner. It is up to the case manager and the general practitioner to establish a joint management plan which can be quite problematic for a number of reasons. Case managers can have anything up to 40 patients on their caseload. Care is allocated on a priority basis with some individuals requiring more intensive management. This ensures that follow-up of other patients may be irregular or at a less than optimum level. General Practitioners vary in their understanding of mental illness, see patients on an irregular basis and may not be accepting of the involvement of the mental health case manager. Unless there is a good working relationship it is impossible to obtain a clear impression of the progress of the patient. In practice this means that each professional is seeing the patient in different circumstances - the general practitioner in the unreal environment of the waiting or consulting room and the case manager in the home environment with the patients' carers. The exchange of information between the doctor and the case manager is vital to obtaining a clear overall impression of the progress of the patient, but in reality it does not occur in every case. The absence of an agreed approach for managing progress is also an impediment. The adoption

of a clear protocol for the use of specific assessment and information exchange as part of a broader progress report would be a useful innovation. This raises a number of issues regarding the type of assessment to be used, the need for training in its application, the interpretation of results and the adoption of safeguards. The absence of an agreed system for ongoing evaluation of patients makes it virtually impossible to obtain a clear picture of the progress of all patients across the Area. It may be assumed that some are doing well, the proxy for this being a low readmission rate. This may not, however, be the reality, as some patients will fall out of care, others will be surviving with quite high levels of symptomatology and distress. While it is impossible to obtain information concerning individual patients the same situation exists when looking at groups of patients with specific clinical conditions. It is for example virtually impossible to obtain accurate information concerning outcomes of care for patients with schizophrenia, bipolar disorder etc. This information would be quite valuable for a number of reasons. In the first instance it would raise questions concerning the outcomes of the case management systems being utilised and in particular the types of treatment within that framework. Undoubtedly the availability of this information would generate discussion and help in the identification of those treatment factors that are beneficial. It would also generate options for applied research to identify the most effective treatment models for rural and remote areas rather than the ready acceptance and implementation of service models that

were originally developed for metropolitan centres or more highly resources services.

It is apparent that the absence of information concerning the outcomes of care poses serious obstacles for the reallocation of resources to ensure their optimal use. It is only through the establishment of a system to obtain information in a standardised and accurate fashion that this can be overcome. The Mid Western Area Health Service has been hamstrung in this regard by the debate concerning the most appropriate ways of measuring consumer outcomes. It may be argued that the information to be ultimately generated may simply reiterate that the current approaches to case management are the most effective. The counter point to this argument is that mental health services have moved into the world of evidence-based practice and it is not enough to be simply doing the work. It is the responsibility of each mental health service to demonstrate that its practices reflect both the best evidence-based approach and the most cost-effective solution. Failure to do so will leave mental health services vulnerable. It is ultimately a responsibility to the consumer that should drive services to be both cost-effective and clinically efficient.

This will become more important with the institution of benchmarking practices by the New South Wales Health Department. This process has commenced although historically the emphasis was on the measurement of outputs rather than outcomes.

Areas are being separately reported on in terms of mental health expenditure per capita, number of occasions of service per mental health worker, the cost of acute inpatient costs, numbers of child, adolescent and family mental health workers and the cost of providing extended care services. Under the National Mental Health Strategy and with the implementation of the Mental Health Case Attribute Service Classification (MHCASC) system and MH-OAT the emphasis will expand to include a measurement of centrally mandated outcomes of care. This information will be collected routinely and used for the purpose of assessment diagnostic acuity, disablement and progress of patients. The Mid Western Area Health Service has taken a small step towards meeting this requirement. The Health of the Nation Outcome Scale (HoNOS) has been implemented in the acute inpatient and community setting. Each patient is baselined on HoNOS prior to being discharged into the community and retested by the community case manager six weeks later. This information is then fed into the case review process. The retest period of six weeks was established, as it is not unusual for a patient's condition to drop back a little after discharge. A retest period of six weeks was considered to provide sufficient time for the patient to resettle into community life. It is planned to obtain software to allow the data from HoNOS to be aggregated for the entire population in treatment. This will provide information concerning the overall progress of large numbers of patients. This can be subsequently broken down to examine the progress of patients with particular types of mental illness. Over time

it is proposed to introduce other assessment tools to complement HoNOS and provide more detailed information.

The Mid Western Area Health Service collects the clinical indicator data recommended by the Australian Council of Healthcare Standards. This information monitors readmission rates, utilisation of electroconvulsive therapy, use of seclusion etc. The ACHS provides a regular report to the mental health service comparing this information to similar services in Australia thereby providing a benchmark. This presumes that each mental health service is treating similar sorts of conditions with the same level of severity, which may not necessarily be the case. Notwithstanding it does at least provide some information for the purpose of reviewing service utilisation and also generates questions concerning service effectiveness. The ACHS in providing clinical indicator data is seeking to have each mental health service review its policies, procedures and practices as part of a quality assurance exercise. It is also important to ensure that feedback is provided for the acute services. Other parts of the mental health service require other forms of utilisation and outcome review. There are conspicuous gaps for a number of these such as child, adolescent and family mental health, extended care and psychogeriatrics.

## The status of epidemiological research within the Mid Western Area Health Service

Rawson (1992) categorised scientific studies as either observational or experimental. In general terms the investigator in an observational study has no control over the situation being observed whereas in an experimental study there is control over at least one factor in the situation under investigation. In epidemiology the opportunities to conduct experimental studies using the rigorous methodology for the experimental method are very limited. For this reason there is greater reliance on observational studies which have the objectives of description and explanation (analytical). Descriptive studies have a more diffuse, superficial or broader view of a disease problem whereas analytical studies tend to define a specific question for more rigorous investigation.

No epidemiological studies have been undertaken by the Mid Western Area Health Service despite the potential benefits of undertaking such studies as defined by Morris (1964). This may be explained by the low priority given to mental health services when compared with other areas of public health. At the service level there has been little local discretion or interest in undertaking descriptive studies of the epidemiological aspects of service utilisation. There has generally been a reliance on the New South Wales Health Department for direction in policy setting and practice frameworks. This direction has already been noted to be lacking in



respect to the area of local mental health services epidemiology. Area Health Services are beginning to recognise the potential benefits to mental health services of having a better understanding of the populations in care, the outcomes of treatment processes and the implications for resource allocation and service planning.

The benefit of incorporating local epidemiological information into mental health service management has taken a long time to be recognised. The minimum annual reporting requirements were met and it was then down to local interest if anything further was to be investigated.

Trends in admissions were simply reported as upward or downward fluctuations without any research into the reasons for this occurring. The only exception to this situation was where there was a financial implication and then the information required was relative to the extent of a particular financial problem rather than the reason for it occurring. Mental Health Services were regarded as simply different. There was not a recognised need to conduct formal epidemiological research. To some extent this also reflected the training of mental health professionals where little emphasis was placed on epidemiology as a subject of ongoing relevance and interest. Mental Health professionals did not recognise the potential benefits to their area of practice.

## MENTAL HEALTH DATA COLLECTION AT THE AREA HEALTH SERVICE LEVEL - A NEW APPROACH

The Mid Western Area Health Service is currently implementing a health information model to assist in the development and evaluation of mental health services. The model will incorporate a plan for the development of an integrated information management system to support the requirement for improving the range and flow of information concerning mental health services within the Area. The model will incorporate data from the Inpatients Statistical Collection and the community mental health information database. It will be augmented with the introduction of a new Community Health Information System presently being developed by the New South Wales Health Department and MH-OAT. The following data sets will be collected over time:

- Financial Data
- Clinical and Epidemiological Data
- Output & Administrative Data

### Financial Data

Total expenditure within the Area Mental Health service must be known. A requirement exists to monitor the total program budget, its distribution between inpatient and community services. Financial information must be available down to

expenditure within individual service units on all major budget lines - salaries and wages, goods and services, repairs, maintenance and renewals, and visiting medical officers. The financial system must be capable of appropriating this expenditure to individual cost centres and recording it in detail. The current NSW Health department financial systems are capable of meeting this requirement if fully implemented within every Area Health service (which is not the case). The availability of this information will allow the quantification of average costs per service type, at least in a broad fashion. General health services have developed complex cost modelling systems and mental health has a long way to go in this regard. It is possible, however, to obtain information concerning the average bed day cost in acute, aged care and extended care services and the average cost of running crisis teams and other types of community mental health programs. It is also theoretically possible to estimate the average cost of an outpatient occasion of service for highly specialised mental health services. This information can be further broken down to look at more specific costs such as expenditure on nursing or medical salaries and wages etc.

Financial data must be benchmarked for the particular type of mental health service so it becomes possible over time to determine the average cost of providing services compared to other units with similar functions. An average bed day cost for an entire psychiatric hospital service for example may be of little comparative value as the casemix may be quite different. If, however, the cost of providing

certain types of service are obtained and used as a basis for comparison the information becomes more relevant as similar programs types can be evaluated.

There is a danger in looking at financial information in isolation, as a wide range of other data is required. Financial data used in isolation can in fact entirely misrepresent the efficiency and effectiveness of a mental health service. Hence the need to develop other data sets to be used as corollaries.

## **Clinical and Epidemiological Data**

As noted previously, while the situation is slowly changing there is limited epidemiological information to profile the consumers of mental health services. To a large extent mental health service systems have developed on a phenomenological basis although disorders will usually be classified according to DSM-IV or ICD-10. It is rare for example to have an acute inpatient service for patients with a specific diagnosis such as schizophrenia or depression. Rather admission is based on the level of assessed risk, such as a danger to themselves, a danger to others or damage to reputation etc. These patients may have a schizophrenic illness or may be a mentally disordered person under the NSW Mental Health Act (1990). It is easier therefore to describe inpatient service units as being acute (servicing patients with an acute illness), sub-acute (no longer requiring acute intensive care but not fully recovered), extended care/rehabilitation (requiring longer-term care)

or psychogeriatric (an elderly person with a psychiatric condition). There are several other possible service types, but only in a few places in New South Wales are there specific inpatient programs for one particular diagnostic group such as a unit for young people with schizophrenia. This is changing to the extent that the development of evidence-based guidelines for treatment programs such as the Early Psychosis Project are requiring a standardised approach to management irrespective of the setting. In practice, however, it is likely that all acute inpatient units will treat consumers with a range of diagnosis. The common factor is acuity of illness.

There are a number of implications in this approach. When a consumer leaves an acute unit they will have a diagnosis and presumably the most distressing symptoms of their condition will be alleviated thereby allowing them to return home with an agreed level of community support. As noted the disability associated with serious mental illness has long been underestimated and this will significantly influence the level of aftercare required. Disability assessment has become more important as there is a direct relationship with the duration of illness and the therapeutic resources required. It is essential therefore that at an Area Health Service level that assessment includes the provision of a diagnosis, an assessment of the associated disability and the likely duration. These factors are taken into account when developing a treatment and rehabilitation program and setting goals with the patient. Evaluation must be ongoing and information fed back to clinical

management. It is only through this process that a true understanding can be obtained of the illness profile of a community and provision made for the assessed needs and related costs. This is a dynamic process according to changing factors that will influence demand for service. Ultimately the goal for administrators should be to obtain a wide range of socio- demographic and clinical information concerning patients and the types of services required at both the level of the individual and the community.

### **Output and Administrative Data**

While the New South Wales Health Department has collected some information it has been relatively scant and mainly to satisfy broad reporting requirements arising from the department of Health Reporting Systems (DOHRS). Under the influence of the National Mental Health Information Development (1998) Strategy this is beginning to change. Ultimately it should be possible to provide a diverse range of information concerning the numbers of consumers being treated within inpatient and community services, their status under the Mental Health act (1990) and the occupancy levels of acute admission units. DOHRS also totals the number of non-inpatient occasions of service, although the various definitional aspects of reporting require further clarification and refinement.

In order to develop a planning model that allows an accurate estimate of service need it is essential that information is collected routinely on a range of treatment services within each Area Health Service. The Mid Western Area Health Service for example provides the following types of specialised mental health services:

### **Inpatient Services**

- Acute Admission
- Sub-Acute
- Rehabilitation
- Extended care
- Psychogeriatrics
- Child & Adolescent

### **Community**

- Social Psychiatry
- Adult Health Centre Teams
- Child & Adolescent
- Aboriginal Mental Health
- Residential/Rehabilitation
- Consultation/Liaison

- Psychogeriatrics

Each of these specialised services within the Area provides for the needs of patients with particular clinical needs. The residential/rehabilitation programs for example provides residential support services on a 24-hour basis to 34 consumers with a history of schizophrenia. Attached to this service is a Continuing Treatment Team which provides assertive community follow-up to a further 50 consumers living within their own homes, flats and units. Another type of service is the Social Psychiatry Unit which treats outpatients with a history of anxiety based disorders including depressive disorder. The treatment programs used in both services are dissimilar due to the need for different approaches. The populations treated also come from different referral sources. In the main referrals into the residential/rehabilitation service come through other specialised services that cannot provide an adequate treatment and rehabilitation program for a consumer with a long-term psychotic illness and for whom hospitalisation is not required. This is quite different to the Social Psychiatry Unit where referrals mainly come from General Practitioners, other health agencies or self-referral. Consumers within the residential/rehabilitation program tend to remain with that service for a long period of time whereas treatment within the Social Psychiatry Program tends to be less than three months reflecting the different type of service provided and the capacity to obtain good clinical outcomes for patients with anxiety based



disorders in a relatively short period of time. It has therefore a much quicker turnover of patients.

These service types are examples only, but it is reasonable to conclude that this situation is similar in most Area Health Services. There is a danger in not recognising the similarities and the differences between various types of mental health services. Each is a key element within a comprehensive mental health service but the role, production costs and outputs will be quite different. The Residential/Rehabilitation Program for example will treat a relatively long-term group of consumers with the overall numbers not increasing dramatically. Within this group there will be three levels of consumer support - 24 hour staffed services, staff supported residences (not 24 hours) and community follow-ups (domiciliary support according to need). The Social Psychiatry Service will annually treat more than 10 times the number of consumers who will be outpatients. It would be unwise therefore to compare these quite different types of services.

Service types and consumer groups must be clearly identified according to the characteristics of their disorders, including diagnosis, disability levels and duration of treatment. From an epidemiological viewpoint the careful monitoring and collection of data will also allow conclusions to be drawn concerning treated incidence and prevalence rates. This in turn allows additional research to be carried out to determine why fluctuations are occurring and hopefully to identify those

factors within a particular community that are causing increased referrals. Anecdotally, some of this information is already available. Recently, following the closure of a major employer in a medium sized country town mental health workers noticed an increase in self-referrals for anxiety and depressive disorders. Their perception was qualified in that the increased referrals did not commence immediately but began to trickle in some months after the closure. This was consistent with the time when the former workers redundancy payments began to run out and their families were left with little financial support. An increase in the amount of dual disorder (mental illness and drug and alcohol problems) was also noted. A further observation of concern was the number of partners of the former workers who were presenting for treatment as the insidious influence of unemployment and poverty began to be felt. Similar occurrences have been noted by rural mental health workers throughout NSW over the last few years in the face of the rural economic downturn.

The value of collecting epidemiological data over a long period of time cannot be overstated, particularly if government considers that it is important to measure the level of morbidity within a community. This facilitates the development of prevention frameworks where at risk communities can be targeted with best evidence-based approaches that potentially could include public sector services, local government and private industry.

A potential also exists to reduce the financial cost to the community through an early intervention approach thereby reducing the potential for worsening of symptoms and the possibility of hospitalisation and loss of productive work time. While it is difficult to estimate, the growing cost of mental illness to government and ultimately the taxpayer is of serious concern. Cost effective approaches are deserving of support if they keep people well and in the workforce for longer periods of time. Ultimately this argument must also be used with treatment services to assess their clinical effectiveness versus the cost of the actual service provision.

Underpinning this argument is the need to obtain information that is standardised, accurate and timely. There is a clear requirement for management within Area Health Services to identify what their information requirements are to operate a service that is both efficient and effective. This requires a back to basics approach and a belief in the need to develop integrated information systems. A danger exists in not developing these systems. Accountants obtain power over decision making and sovereignty in allocating resources because of the failure of clinicians to technically come to terms with their areas of work.

A cascading system needs to be developed that will allow the information to be aggregated at each service level to provide guidance for a range of purposes. The program level will be the highest level and information provided on the numbers of

people in care within the Area Health Service, their diagnosis, time of registration with the service and a range of socio-demographic data. The data will be de-identified as there is no reason at the program level to personally identify clients of the service. It will also be possible to correlate the patient groupings with the service streams within the Area's Division of Mental Health Services. These streams are organised along population lines (children and younger people, adults and older people) and specific diagnostic and treatment service types.

The availability of improved data at the program level will allow greater evaluation of service outputs. It will be possible to correlate the cost of providing certain types of mental health services in specific treatment settings. At this time it is not possible to accurately assess the cost of providing treatment in a range of specialised settings-acute inpatient settings, residential rehabilitation settings, extended care facilities etc. Similarly it is difficult to obtain accurate costings of providing occasions of service in crisis teams, child, adolescent and family services or clinics in rural and remote areas. It may be possible over time to also develop a capacity to match the costs of treatment and rehabilitation to groupings of patients with similar diagnosis and disability levels. This type of cost modelling is important from the point of benchmarking and will facilitate the reallocation of resources from low need to high need groups of patients. It will also identify where there are deficiencies and inefficiencies and lead to a more equitable situation where those clients who are most in need will receive a better level of service. This

presumes the availability of an accurate and acceptable method of assessing outcomes for clients within given programs.

The next level is that of the service stream. As noted within each stream there are a range of specialised treatment services which are separately funded to provide services to a defined population group. If the stream to provide services for older people is considered it is possible to identify several types of inpatient and community based assessment, treatment and rehabilitation services. Not all of these are within the psychogeriatric service but they are generally complementary in terms of their aims and objectives. Examples of the types of treatment services include mobile assessment teams, inpatient admission and assessment units, dementia clinics, extended care facilities and respite services. Some patients will move through all these services as their condition deteriorates while others will require only one type of service. It is essential for managers and clinicians within the service stream to have accurate and timely information concerning the numbers of patients in care, their location, treatment and rehabilitation requirements. This not only ensures that people do not get 'lost between the cracks' but also provides important information concerning the pattern and distribution of illness among elderly people in the Area which is vital in planning for future service requirements and evaluating how well community need is being met. A similar situation exists for each of the other service streams within the Division of Mental Health Services (children and younger people and adult services).

As an extension of MH-OAT the Area Health Information Model for Mental Health Services will acknowledge the requirement to utilise different types of assessment and treatment services. This will grow out of the clinical requirements of the population being cared for. Ideally assessment will be comprehensive, comprising a range of specialised approaches and highly individualised treatment programs. The next level of reporting within the health information model is at the level of the service unit. Each has a specific identify within the service stream that is complementary to the overall range of assessment, treatment and rehabilitation provided. For this reason the outcome measures will be different to other service streams but congruent with other types of service units within the stream. This will allow accurate comparisons and benchmarking. In practice it should be possible to produce regular reports of the clinical activities of each unit, outcomes evaluation and service costings.

Information will not be collected twice. The cascading effect within the Health Information Model will ensure that data is consolidated by specialty group and service stream and included within an overall report for the Division of Psychiatry. There is one other vital level of reporting that requires mention. This relates to the individual patient. Currently this is restricted to the individual medical record. Data to be obtained from this source will mainly relate to the requirements of the National Minimum Data Set.

Over time it will be possible to obtain accurate information concerning the pattern and distribution of mental disorders referred to public mental health services within the Area. When this is analysed it should be possible to discern trends in the requirement for a range of resources such as beds, staffing, diagnostics etc. It will also provide some insight in to the effectiveness of some of the prevention and early intervention strategies endorsed in the National Mental Health Plan which are to be progressively implemented throughout Australia over the next five years.

## RESOURCE ALLOCATION AT THE AREA HEALTH SERVICE LEVEL

The only guide for resource allocation at the area Health service level comes from the National Mental Health Strategy (1992), which recommends an ultimate split of 50:50 between community based mental health services and inpatient services. Within the community the policy identifies three broad groups of services to receive funds:

- Ambulatory services comprising outpatient clinics (hospital and clinic based), mobile assessment and treatment teams, day programs and other services dedicated to the assessment, treatment, rehabilitation and care of people affected by mental illness or psychiatric disability who live in the community.
- Specialised residential services that provide beds in the community staffed by mental health professionals on a 24-hour basis. These services, designed for people with significant disability and dependency needs, aim to replace many of the functions traditionally performed by long stay psychiatric hospitals. They include residential services established as specialised psychogeriatric nursing homes for older people with mental illness, or dementia with severe behavioural disturbance.



- Services provided by not-for-profit non government organisations, funded by government to provide support services for people with a psychiatric disability arising from a mental illness. These services include a wide range of accommodation, rehabilitation, recreational, social support and advocacy programs.

The National Mental Health Report (1996) indicated that between 1992/93 (when the first financial figures were obtained) until 1995/96 that ambulatory services accounted for approximately 78% of total expenditure on non-inpatient services over each of the four years. Non government organisations grew to account for 8% of all community mental health spending and over the four years spending on residential services increased by 49% and accounted for 14% of total spending on non inpatient services in 1995/96. This pattern of expenditure varied significantly between states and territories with more than a two-fold difference between the highest the lowest spending jurisdictions. For reporting purposes all forms of expenditure on non-inpatient services were aggregated to produce a national trend. This demonstrated that average community mental health per capita spending has increased from \$18.2 in 1993 to \$27.1 in 1996. Of all states Victoria leads the way with expenditure increasing from \$23.4 to \$40.6 while New South Wales has improved its position from \$17.1 to \$22.3.

More significantly since 1993 the proportion of total mental health funding spent on community based services has increased nationally from 29.3 % to 41.5% while expenditure on stand alone psychiatric services has decreased over the same period from 49.2% to 35.2% reflecting an objective to progressively transfer resources to community based settings. Additional resources in the form of reform and incentive funds have been provided under the National Mental Health Strategy to facilitate the development of community based services.

Mental health program funds are allocated annually to each Area Health service in New South Wales. Provision is made for Burdekin funds and any National Mental Health Plan reform and incentive funding. The Area has the discretionary authority to move funds between inpatient and community services, but not to decrease the total amount of money spent on the total mental health program. The reform and incentive funding is quarantined and allocated for the implementation of centrally directed high priority projects such as the implementation of programs for children, young people and elderly people.

Each Area Health Service administration has responsibility for allocating its general operating budget in accordance with the thrust of the policies of the NSW Health Department. The program budget received from the area is therefore part of a larger pool of funds allocated by the New South Wales Government and Commonwealth. Each Area Health Service has a target share which is being refined

over time by the development of the Resource Allocation/Distribution Formula. Prior to each Area health service receiving its allocation amounts are removed from the total state budget for specific functions. The New South Wales Health Department funds a state policy unit, the Centre for Mental Health and funds are also identified and allocated for special services. These special services include statutory bodies such as the Mental Health Review Tribunal, the Institute of Psychiatry and Corrections Health Service. Grants are provided to non-government organisations and special funding provided for services that have a statewide role. These include the Transcultural Mental Health centre, the Neuropsychiatric Institute, child and adolescent inpatient services, medium secure and intensive care units. It is also proposed to fund very long stay patients and clients with no fixed address from this vote.

It has been proposed that the balance of funds will be allocated under the draft Resource Distribution Formula to Area Health services on a population based approach which will require an internal distribution within Areas according to a pre-specified split. This currently is recommended as child and adolescent mental health services 15%, adult mental health services 65%, and aged persons mental health services 20%. This funding arrangement has not yet been applied to individual Areas and will not be able to be introduced rapidly in all cases due to the need to re-organise the current level of service provision.

## PLANNING MENTAL HEALTH SERVICES AT THE AREA HEALTH LEVEL

The NSW Health Department Mental Health Policy (1998) does not provide a full range of planning benchmarks for the development of services or allocation of mental health resources within Area Health Services. The New South Wales Centre is however steadily producing a range of policy and planning documents for specialised mental health services. The current state policy is valuable and represents a broad overview of the directions to be taken in the state and is consistent with the National Mental Health Policy. This is quite different to physical medicine where there are clear benchmarks for the number of beds for open-heart surgery or brain surgery and the number of paediatric beds required for a given population. One of the reasons for this situation in mental health has been the lack of information concerning population needs and a requirement to plan for state, area-wide and local services. There has also been a fragmentation of effort as the responsibility for providing certain types of mental health services has been split between specialist psychiatric services, primary health care services and general hospital units. These issues have been highlighted as the Department of Health has moved over the last few years to improve its information base to better inform the planning and resource allocation process.

At the Area Health Service level the local service plan is meant to provide for the needs of the populations within respective catchments. This process has been

guided substantially by broad prescriptions that loosely describe the types of services that an Area should have, eg, acute inpatient psychiatric units, child, adolescent and family mental health teams, community crisis teams etc. Attention is paid to the historical demand for these services with a particular emphasis on utilisation data such as waiting times for acute inpatient admission or appointments at community clinics. This approach takes into account the service needs and cost of providing existing services and the likely future cost due to factors such as population growth. Socio-demographic data on the catchment is taken into consideration such as age and gender distribution within the community, ethnicity and socio-economic status. Another factor is the presence of non-government services such as private hospitals and private psychiatrists who may reduce the demand on the public sector.

Some Area Health Services provide for populations outside their defined area of administration. Where there is an absence of mental health services there is an outflow of consumers to other parts of the state in order to receive treatment and rehabilitation. The extent of flows varies significantly between Area Health services. In some circumstances consumers will move between geographical areas just to be able to access general psychiatry services not available in their own locality. In other situations outflows will occur for highly specialised mental health services which may be community or inpatient based. When flows occur in large numbers and when consumers choose to remain permanently in an Area in order to

gain access to services on an ongoing basis the treated prevalence rates may vary markedly. This is a relatively common occurrence in some major centres in rural New South Wales, where there are few inpatient mental health services available west of the Blue Mountains.

This has the potential to significantly influence the utilisation and the allocation of resources within Area Health Services. The Mid Western Area Health Service accepts referrals from other community mental health teams and non-government organisations from all over rural New South Wales. The implications for the Mid Western Area are significant both in terms of the issues related to everyday clinical service provision and the cost to the local mental health service. There is also pressure to accept metropolitan referrals and thereby increase this service, but there is not a mechanism for transfer of financial resources from other health services to meet the costs associated with care. It is important to be able to describe the clinical characteristics of this population in order to understand why they could not be managed in their own Areas. This is one example of how treated prevalence rates may vary for specific groups of consumers with particular mental illnesses. Planning must allow for such occurrences and resource allocation must take into account the particular practice patterns evident in the community. These need to be progressively re-evaluated to accommodate changing patterns of supply and demand.

## BUILDING AN INFORMATION SYSTEM

Clayton (1999) makes the extremely important point that in this context the term 'information' is used in a broad sense referring to 'management intelligence' that is required to effectively plan, resource, manage and deliver mental health services in a way that best meets community needs. This information requirement must be placed within the context of a broader model such as Morris' (1964) which specified the potential uses of epidemiology in planning, resourcing, delivering and managing health services. The gathering of information can become an end in itself with the accumulation of vast data sets which remain either unanalysed or poorly analysed. Morris' uses provide a guiding framework which throws up questions concerning the type and amount of information required to be gathered and importantly how it should be utilised.

Clayton (1999) and the National Mental Health Information Development project describes an endpoint of cascading levels of information. The first of these is the service delivery level. This is primarily directed to obtaining information that is crucial to the assessment and formulation of individual service plans. This must be reasonably standardised and allow for evaluation of treatment outcomes. Other levels have been described for service management and policy development. The fact that these have been specified is indicative of their absence at least in any uniform manner in Australia at this time.

Four priorities have been agreed for information development over the next five years:

- strengthen the focus on consumer outcomes
- support improvement in service quality
- shift the focus of concern from cost to value for money
- improve the understanding of population needs

There are a number of requirements underpinning these objectives. There is currently an absence of information infrastructure including tools and data standards. Importantly there is also a requirement to obtain the critical support of the clinicians responsible for implementing whatever systems are put in place. If there is not a degree of ownership of these systems including a clear understanding of their importance and relevance, they will be met in the implementation phase by passive resistance. There must be formal mechanisms for feeding back information in a manner that facilitates the work of clinicians and managers if the acceptance and penetration rate is to be high.

In summary, the National Mental Health Information Development project aims to address the following gaps in existing information:

- limited patient data



- no standard outcome measures
- no methods for classifying the products of mental health services
- no process for collection of data on community mental health care
- lack of benchmarks to evaluate services
- no capacity for data linkage
- limited understanding of broader population mental health needs

By addressing these deficiencies mental health will be better aligned with the tenets of a public health model as described by Satcher (1999). This subsequently reciprocates the uses of epidemiology as described by Morris (1962) and allows mental health to benefit from the drive towards 'capacity building' within health care and community development generally. Importantly it also takes mental health out of the shadows as it becomes more easily described or transparent in terms of its service base, effectiveness and cost. In turn this allows mental health to compete openly for resources and hopefully on a level playing field.

Community understanding of mental health as a paramount health issue is essential if there is to be support for ongoing research and development. By being better able to describe the nature of mental health and illness it is possible to obtain wider community support. This, however, will only be forthcoming if there is a belief that it is a credible endeavour. In the past, much of the support for mental health has come from consumer groups who have lobbied for additional resources and a

generally higher priority. While this level of advocacy is essential it should not be the only basis for decision-making concerning resource allocation. The development of better information systems is crucial to supporting frameworks for change at a time when the scientific community is calling for higher and higher levels of evidence. This drive towards empiricism within public health model only reflects what is occurring within the wider field of science. Proponents of this approach criticise ambit claims for additional resources when the evidence base for need and treatment effectiveness is not readily available.

Epidemiology has a number of strengths in this regard. In 1998 major cross sectional study was undertaken of people with schizophrenia in five European countries. The study was titled the 'European Psychiatric Services: Inputs Linked to Outcome Domains and Needs (EPSILON).' The intent was to develop standardised instruments to facilitate cross national research into the care of people with schizophrenia. The five key instruments utilised were adopted for use in five languages and different service settings and compared data about clinical and social variables, mental health care and costs. The instruments were the Camberwell Assessment of Need (CAN); the Client Services Receipt Inventory (CSRI); the Involvement Evaluation Questionnaire (IEQ); the Lancashire Quality of Life Profile and the Verona Service Satisfaction Scale (VSSS). The data obtained provided a multi-dimensional picture of the needs of people with schizophrenia, their service use and their appraisal of quality of life and services

available. Importantly this study demonstrated that it is possible to conduct cross national studies with high levels of confidence regarding the results and conclusions. This has major significance when viewed in the context of service planning, development and reform.

While a national approach to needs assessment and treatment outcome is essential it does not preclude area health services throughout Australia adopting their own assessment protocols and standards. While there is a clear requirement to improve the volume and range of data available nationally it is also recognised that there are local imperatives for planning and assessment which may at times require other more independent forms of review.

In the first instance, the effort needs to be directed towards ensuring a commitment to objective planning and evaluation. As previously noted the major argument to win is one of relevance and feasibility, particularly in relation to meeting the process indicators for 'capacity building.'

There is also a requirement to provide education, training, hardware and software to facilitate the easy acquisition of core data from consumers as they enter into care and treatment. While this is moot there is ample evidence of where unrealistic expectations have been placed on service delivery staff.

The question arises as to what information sets should be collected in response to progressively meeting Morris' (1964) uses of epidemiology. While this will vary the following general guidelines are proposed as starting points for area health services.

# **1. HISTORY OF THE HEALTH OF THE POPULATION, THE RISE AND FALL OF DISEASES AND CHANGES IN THEIR CHARACTER**

To fulfil this use of epidemiology it is essential to collect information over time (longitudinally) in a standardised fashion. For the purpose of this exercise the collection would be for individuals referred to public mental health services. The intent would be to classify and compare treated incidence and prevalence rates for various types of mental illness which may change in volume and character over time. While it is recognised that the majority of mentally ill people are seen by general practitioners it is also important to clearly ascertain the major reasons for referral to public mental health services where the vast majority of resources are expended. It ultimately should be possible to compare and contrast this to the population being seen by other agencies, the degree and reason for cross referrals.

- Registration of inpatients/community clients on Minimum Data Set

- Total separations, beddays and average length of stay/time in treatment
- Source of referral and mode of separation
- International Classification of Disease Version 10
- Australian National Diagnostic Related Groups (ANDRG)
- Catchment/flows and reverse flows
- Principal reason for referral relative to diagnosis
- Proportion of referrals that are readmissions/representations
- Disability assessment on presentation and separation

2. DIAGNOSIS OF THE ILL HEALTH OF COMMUNITIES,  
MEASUREMENT OF THE DIMENSIONS OF THIS ILL HEALTH,  
DEFINING PROBLEMS FOR COMMUNITY ACTION, THEIR  
IMPORTANCE AND PRIORITY. TO IDENTIFY VULNERABLE GROUPS  
NEEDING SPECIAL CARE

Much of this information can cascade from the first use of epidemiology following a critical analysis of the data. The availability of quality information collected over time facilitates this process. Once collected, it is possible to evaluate the effectiveness of services provided by public mental health service systems. It also assists with planning for future service provision including the allocation of resources to achieve the best possible outcomes. This is important for all stakeholders including planners, clinicians and administrators:

- The changing nature of admissions/presentations by diagnosis
- The frequency of admissions/presentations
- Type and level of treatment provided (procedure codes)
- Amount of medication prescribed

- Number of patients requiring long-term hospitalisation
- Number of suicides/attempts within a given period
- Number of Aboriginal people referred for treatment
- Identification of prodromal symptoms (to guide early intervention)
- Identification of homeless people with a mental illness
- Identification of mentally ill people appearing before the courts
- Identification of unemployment levels
- Identification of primary carers also with a mental illness
- Identification of mentally ill people without a general practitioner
- Identification of mentally ill people without a case manager

- Identification of mentally ill people attending emergency departments
- Development of priorities for research

A requirement exists to provide a more comprehensive assessment of people with a mental illness to identify the level of impairment, disability and handicap. The removal of acute symptoms with their associated distress may not address the underlying problems associated with restoration to optimal levels of functioning. Traditionally within psychiatry there has been major emphasis placed on diagnosis and treatment without adequate emphasis on the other dimensions of mental illness. This problem was identified much earlier in respect to physical illness due to the ongoing cost to the patient, their family and the community. Rehabilitation medicine has developed as a specialty area within general medicine. For a number of reasons this same level of progress has not been evident in psychiatry possibly because of the lack of assessment techniques and tools. There has also been a lack of awareness and competing views concerning the nature of psychiatric rehabilitation. It is extremely important to measure all dimensions of mental illness if the individual is to receive holistic treatment and support. This must commence with individual service planning and the development of a treatment and rehabilitation partnership between the case manager and the



patient which should in itself be empowering. There is a requirement to introduce agreed future outcomes into the treatment process from the outset and to set frequent review dates to assess progress. The following information should be sought using an assessment such as the International Classification of Impairment, Disability and Handicap (ICIDH):

- Assessment of impairment
- Assessment of disability
- Assessment of handicap
- Impact of medication on motivation levels
- Level of formal education
- Skills and/or prior education (TAFE, college, university)
- Impact on carer's social, financial, vocational situation
- Level of sick leave, workers' compensation, leave without pay
- Overall financial status

- Employment and/or retraining potential
- Identification of cultural issues relating to rehabilitation
- Identification of significant supports which have not been accessed
- Identification of barriers to rehabilitation, eg, lack of transport
- Identification of appropriate service providers
- Identification of complicating physical disorders
- Extent of support available from carers/family
- Identification of prior rehabilitation initiatives

### 3. STUDY THE WORKING OF HEALTH SERVICES WITH A VIEW TO THEIR IMPROVEMENT

It is possible to accurately assess the functioning of mental health services at the operational, clinical and service planning levels. This is currently undertaken by a number of agencies including the respective health department and external accreditation bodies such as the Australian Council of Healthcare Standards. More importantly, it is vital that mental health services have programs in place to monitor their own performance against state and national benchmarks. It is vital that local service planning and provision takes into account the needs of the community. While this may be assessed in a number of different ways, perhaps the most important is to ensure that services provided are based on good evidence for clinical effectiveness and are offered in a equitable manner as possible. This requires the routine collection and analysis of service-related data. As with Morris' (1962) first two uses of epidemiology this third use builds on the others but is more directed towards assessing the outcomes of service planning, development and provision. While area health services may choose to measure a number of different outcomes there are key standards outlined in the National Mental Health Standards. These may be independently evaluated and services must also undertake self-assessment. It is worth posing a number of questions to area health services which give an insight into the priority accorded to the collection of operational and

clinical data and its influence on service delivery and development. These questions seek to ascertain the existence of a framework for the identification of information that is crucial to the functioning of the service. Clearly, through the implementation of the National Mental Health Information Development project there will be a far greater emphasis placed on the collection of data. This is not sufficient by itself as it remains a question of how this information is actually used by area mental health services. The following questions are examples of self-evaluation that can be used to identify how well developed the information processes and systems are:

- is there a system for collecting service-related data?
- is this system understood and supported in practice?
- is epidemiological data used to inform service planning and development?
- how is data collected and at what service points?
- are there data standards in place?

- how is data fed back to stakeholders?
- are there agreed clinical outcome measures?
- are these benchmarked?
- are clinical indicators routinely collected?
- what is the system in place to review data?
- is clinical data related back to service costs?
- are there clinical costing models in use?
- is marginal analysis routinely undertaken?
- is there a regular data feedback forum for senior clinicians and financial services staff?
- is local data compared to state-wide data collections?
- does that data system encompass sub-specialty needs?

- how does data collected link to workforce planning?
- how does data collected link to workforce allocation?
- how does data collected link to service design?

#### 4. TO ESTIMATE FROM THE GROUP EXPERIENCE WHAT ARE THE INDIVIDUAL RISKS AND CHANCES, ON AVERAGE, OF DISEASE, ACCIDENT AND DEFECT

While this work has concentrated primarily on treated incidence and prevalence rates, it is possible to use this information to make comparisons with state and national data. Estimations of rates of illness or ratios is well accepted in physical medicine and increasingly within psychiatry. An example of this is the lifetime prevalence of schizophrenia being one percent of the population. Fundamentally, a rate is an expression of the frequency with which a particular phenomenon occurs per unit of population at a given time within a specific period. To calculate epidemiological rates it is essential to know the number of occurrences of a particular condition, the size of the population within which these cases occur 'population at risk', and the time dimension. If, for example, a mental health service is providing a treatment service for a population of 200,000 people, it should in theory be possible to plan for the care of a specific number of cases of schizophrenia, bipolar

disorder, etc. The Australian Bureau of Statistics National Survey of Mental Health and Wellbeing of Adults (1997) found that one in five adults may have at least one of the common mental health disorders at some time during a 12 month period. The survey also found that the most common mental disorders in adults are anxiety disorders (9.7 percent), affective disorder (5.8 percent) and substance use disorders (7.7 percent). Forewarned and forearmed with this epidemiological evidence it should be possible to plan for certain levels of public service provision while making allowances for contributions from the private sector - general practitioners, private psychiatrists etc.

By measuring treated incidence and prevalence rates it is possible to make comparisons with other public mental health services and consequently make a case for better planning and service provision. It should also be possible over time, in a nosological sense, to classify mental illnesses as acute, chronic, episodic, recurrent, endemic or epidemic. The following information should be collected as a starting point for review:

- incidence rates for specific mental illnesses
- prevalence rates for specific mental illnesses

- morbidity rates
- age of onset for specific mental illnesses
- breakdown by gender
- rates of illicit drug use
- rates of alcohol abuse
- rates of dual disorder.

## 5. TO COMPLETE THE CLINICAL PICTURE OF CHRONIC DISEASE AND DESCRIBE ITS NATURAL HISTORY

This use of epidemiology has enormous implications for area mental health services. The gathering of information that describes the clinical picture of chronic disease goes to the heart of service planning, policy development and funding. As noted previously in this work the true extent of chronic disease among sufferers of particular types of mental illness has been largely ignored. While many sufferers should not and do not want to be regarded as 'chronic' there is nevertheless an imperative to provide effective services to meet both theirs and their families' needs. While



public mental health services do not treat everyone with a mental illness a service is often provided to the most highly disabled individuals within a population. This should allow estimates to be made concerning the required level of service provision. In some circumstances this will also be instructive for other government departments such as the Department of Housing which may be called on to provide housing stock. It is significant that in New South Wales a highly impaired sub-population of people was accommodated within private boarding houses. Yet, area health services did not know how many people were in residence, for what reason, their support needs, financial position etc. When the state boarding house strategy was initiated it became necessary to undertake individual assessments of every boarding house client. One of the problems in this process was the requirement to develop a suitable assessment tool to provide an accurate picture of the individual client including the degree of impairment, disability and handicap. Public mental health services are in a unique position to gather information that can better inform understanding of the clinical picture of chronic mental illness simply by looking at service utilisation patterns. Again, it should be noted that some of this information may have already been collected in observance of the other uses for epidemiology. Ultimately it becomes an issue for area mental health services to develop a screening process through which most of this information can be collected and used

flexibly for individual service planning and also as aggregated data to inform population needs:

- date of first presentation to area mental health service
- diagnosis given at first admission/presentation
- primary identification data (age, sex, etc.).
- point of care (inpatient or community)
- subsequent admissions/presentations
- point of care for subsequent presentations
- reason for subsequent presentations
- assessment of impairment, disability, handicap
- community support requirements (housing, pension, employment)
- use of medication (type and amount)

- assessed level of co-operation in treatment
- complicating factors such as organic brain damage
- financial cost of treatment/rehabilitation (cumulative)
- availability of suitable treatment/rehabilitation options
- access to treatment/rehabilitation (rural and remote)
- extent of acute or chronic exacerbations
- identification of special needs
- identification of known contact points for assistance

**6&7. TO IDENTIFY SYNDROMES BY DESCRIBING THE DISTRIBUTION, ASSOCIATION AND DISSOCIATION OF CLINICAL PHENOMENA IN POPULATIONS. TO SEARCH FOR CAUSES OF HEALTH AND DISEASE**

A syndrome is a collection of signs and symptoms denoting the presence of an illness. Epidemiology has an important part to play in the identification of factors that predispose to the development of particular syndromes. The

association or linkages of these factors is particularly important in both a disease prevention and treatment model. Area health services need to monitor factors within populations that are known to predispose people to the development of mental illness. While an infectious or communicable disease model is not entirely replicable, these are factors which are known to cause mental illness. As an epidemiological model also requires monitoring or surveillance of cases this same public health approach can be used in the treatment of people with mental illness in order to assess treatment progress and recovery patterns. While it is unlikely that new mental illnesses will be found, monitoring will help explain local disease patterns and their distribution within communities. Greater emphasis is being placed on early intervention. Rural communities that have been subjected to the dual impacts of recession and drought are more likely to see higher levels of depression and suicide. An example is the deregulation of the dairy industry in New South Wales with more than 500 dairy farmers expected to be put out of business. This is clearly at at-risk group for the development of depression and anxiety-based disorders. The identification of those factors that have been instrumental to the development of mental illness can help in raising the level of awareness among treating practitioners. An understanding of the principles of relative risk and attributable risk can assist in the development of prevention and early intervention approaches in psychiatry. This strongly applies in respect to the association between

the development of mental illness and physical illness. Individuals disabled by pain and suffering are at greater risk of developing a mental illness. Elderly people living in nursing homes can be considered a population at risk for depression. Once a condition has developed the clinical history-taking is important from the viewpoint of diagnosis and also in determining the correct treatment approach. Accurately, describing the association between causative factors and the development of mental illness is pivotal.

A further advantage of the use of Morris' model is that it has general endorsement among clinicians, researchers, administrators and planners. It has substantial utility and provides a template for the use of evidence-based practice and planning. This acceptance is crucial for mental health services where simply providing good quality information is not enough to change behaviour. Morris' model underpins public health approaches by offering something of value for the major professional interest groups.

Waddell (2001) emphasised the importance of professional commitment to planning, policy development and dissemination of evidence in order to ensure uptake. This will not occur if there are dissenting views and even antagonism towards the paradigm and the process of implementation. In this respect it is essential to identify and understand the different cultural contexts in which researchers, clinicians, policy analysts and decision

makers operate. These contexts are characterised by different social settings with different ideologies, institutional structures, interests and incentives. Waddell noted that researchers and various decision makers often functioned within their own solitudes according to their cultural rules and mores. Researchers and policy formulators, for example, have often acted as if reality is highly rational and that good research evidence or policy information simply percolates in one direction in a top-down approach.

Decision makers at area health service levels usually operate in settings where clinical and policy problems need to be solved quickly and efficiently. They are not likely to embrace a new system, irrespective of how well based on good evidence if it is unwieldly and difficult to operate. Too often there has been a remoteness or distance between planners, policy analysts and clinicians - there has in practice been no connective tissue. Morris' (1964) uses of epidemiology provides such a template of connective tissue as it comprises a common point of interest to the major stakeholders, whether it be at central policy making level or in the field in clinical practice. Within mental health, Morris' uses provide a useful starting point for research, policy development, planning, clinical priority setting and outcomes evaluation. Because there are elements within each potential use of epidemiology that will have theoretical and practical appeal to most disciplines it should be possible to market the broader model successfully.

It may be feasible to convince mental health clinicians of the value of accurately recording what they do, who with, and over what period of time. This will not only inform the wider system but also confirm or otherwise where the effort and the resources need to be targeted for effective outcomes. More simply, it is possible for system designers to see value in the incorporation of Morris' (1964) potential uses of epidemiology and for clinicians within an area health service to also identify the potential payback to them and the communities they serve.

## MENTAL HEALTH CLINICAL CARE AND PREVENTION MODEL (MH-CCP)

Currently, the New South Wales Health Department is developing what has been a Mental Health Clinical Care and Prevention Model (MH-CCP) which is fundamentally a population mental health model. MH-CCP has been many years in development and is solidly grounded in a systematic review of a broad range of mental health related epidemiological research. The New South Wales Health Department (2001) goes to great lengths to point out that the new system is not a resource distribution model or a casemix classification. It is touted as a clinical care model to assist in identifying the requirements within a population for comprehensive mental health services across the lifespan. Specifically it focuses on the clinical and scientific tasks of prescribing 'care packages' or 'interventions' for individuals and relevant population groups. Published epidemiological data are used to estimate the numbers in the population or 'care' groups. The MH-CCP is a particularly well researched and constructed model. It is clearly light years ahead of anything else that has been tried in Australia and possibly overseas. It is also inordinately complicated and technical in implementation which will be progressive.

MH-CCP suffers badly from poor marketing and would benefit from being more closely aligned with what it purports to be based on - good epidemiological and clinical evidence clearly located within a public health model. While area health services will be required to use it as a tool to underpin planning and associated



resource bids it will surely flounder under a weight of cynicism unless it is owned by the very professionals who are meant to use it. In a sense, MH-CCP has been developed in the laboratory. Undoubtedly it draws together a great deal of published and unpublished research but runs the risk of meeting the fate described by Waddell (2001) where it will be resisted and fail to meet the 'uptake' test due to faulty dissemination. Clearly there needs to be a balance between resistance to change and obsequiousness. The key is credibility without which key Area Health Service decision makers will eschew the introduction. A poor alternative is to implement by fiat as this generally results in minimisation where the least possible is provided to meet the barest requirements. This hardly has the effect of winning the hearts and minds of the key professional groups. MH-CCP runs the risk of being seen as a technocratic dictum rather than an extremely useful planning tool that underpins quality and effectiveness of service delivery.

If MH-CCP is placed within Morris' (1964) paradigm it becomes much more marketable and germane. It would be seen as a useful instrument to facilitate the potential uses of epidemiology to improve the mental health of the population. Morris' potential uses of epidemiology have stood the test of time in general health, are easily understood and capable of being practically implemented at multiple levels simultaneously. While unintended by the developers, MH-CCP could easily be seen as a stand-alone system, poorly contextualised within an overall public health model and regarded as an imposition. The rapid rollout within New

South Wales mental health services will strengthen this impression as little time has been given to explaining its development, centrality and benefits. This would be unfortunate given the excellent development work and originality of design, and given Satchers' (2000) comments that mental health services development is best facilitated by adoption of all the elements of a public health model.

MH-CCP when viewed as a tool to complement Morris' uses of epidemiology within an overall public health framework becomes very valuable if not transcendent. When used in conjunction with a comprehensive clinical information system and casemix system it could be regarded as the tool to drive planning, resource allocation and outcomes evaluation at the Area Health Service level. This is most likely the objective of the New South Wales Department of Health but it will be difficult to accomplish without philosophical and practical ownership of the model. While there may be an impression generally that the New South Wales Health Department operates in a top down fashion, the reality is that it cannot function at all without bottom-up commitment. This is particularly the case when it comes to implementing new systems as a component of any major change process. Fundamentally, the operation of any government department is dependent upon good information - epidemiological, clinical, financial etc. This can only come from individuals at the coal face who input a wide range of data to serve the reporting and evaluation needs of the system. This is the problem. When important information is seen as supporting the needs of the bureaucracy rather than the

workplace it is generally regarded as a burden and little attention is given to analysing what this information means to Area Health Services. As noted throughout his work, in the case of mental health the information has been incomplete, of dubious quality and limited in volume. The current revolution in developing comprehensive information systems to support the development of critical mental health services throughout Australia is long overdue. The challenge is to ensure that the right information is collected, in the right amounts and in a manner that facilitates the work of Area Health Services.

By framing the requirements for information (including MH-CCP) within Morris' uses for epidemiology it locates the reform process within marketable framework. It then becomes a case of 'good product, good marketing'. A further selling point is that the benefits are readily discernible to staff at the Area Health Service level and the uses of epidemiology can be used to tailor information requirements to support an entire system of mental health service delivery or specific components. A major thrust within the New South Wales Health Department lies in the requirement to devolve responsibility to clinicians and managers. This is fine in principle but must be supported by high quality information for priority setting, planning, resource allocation and outcomes evaluation. Once the information systems are in place, the data may be reported upwards and also locally and can be used to inform the workings of the mental health service and therefore support the hard work and effort of staff. It would reflect what is actually happening both at a given

period in time and indeed over time where the health status of the population can be measured - in this case, populations of mentally ill people in receipt of public mental health services. Ultimately, the adoption of Morris' uses of epidemiology to guide the operations of mental health services will facilitate the thrust of the Department of Health philosophy of empowering the workplace. Opportunities for research, service development and improvement become transparent and easier to prioritise.

Currently, mental health services are subject to a wide range of interim reporting processes that, while important, are not readily understood or identified with by clinicians. Each year, Area Health Services are required to report information on the New South Wales Health Department Costs Data Collection, National Mental Health Survey, Enhancement Program and a multitude of individual reports on special projects of one type or another. There is no single point where all this information is brought together in a readily digestible reporting format that benchmarks the progress of the state as a whole or individual Area Health Services. Morris' uses of epidemiology could provide an excellent basis on which to develop such a report. It is significant for example that the Centre for Population Health in the Mid Western Area Health Service now produces such a report on an annual basis. It covers all aspects of disease incidence and prevalence and is a very useful tool to support planning, service development and evaluation of general health services. Nothing of a similar fashion is available for mental health services.

This is the same situation at a state level, although the Chief Health Officer's Annual Report now includes a section on mental health, one of the national health priority areas.

## CHAPTER 4

### SUMMARY OF FINDINGS

Until recently, in New South Wales there has been no public health policy requiring Area Health Services to routinely undertake epidemiological surveillance of all clients in treatment in both community and inpatient services. This is despite the view of a number of international authorities that such surveillance is essential from an epidemiological viewpoint where populations should be disaggregated by age, disability and diagnosis to inform planning, resource allocation and evaluation. It is recognised that, where applicable, the privacy and confidentiality issues of patients can be safeguarded through the use of de-identified data and patient numbers.

When evaluating progress in implementing the National Mental Health Strategy (1992) Manderschied and Parkis (1997) concluded that despite the substantial gains there were at least six major deficiencies in service provision that could have been readily detected by studying the local mental health service systems and the populations in treatment.

The Mid Western Area Health Service was selected and evaluated against this criticism and in a broader context to identify how well it incorporated Morris

(1964) uses of epidemiology in establishing clinical priorities, allocating resources and outcomes evaluation. This Area Health Service was chosen due to its well developed service infrastructure and because it is considered a typical example of similar services in the rest of the state. It was clearly evident that the Area lacked even rudimentary information policies and systems to undertake mental health epidemiological surveillance due in part to the absence of Department of Health guidance in this area. It should be noted, however, that this situation is beginning to change in the light of new developments and the Area had at least taken the initiative to commence development of its own 'local' system which was supplemented by a number of relevant, well targeted surveys of client characteristics and service utilisation.

The New South Wales Mental Health Policy (1998) stipulated 10 priority populations. While these groups have been targeted with additional financial resources there is an absence of dedicated epidemiological surveillance systems at the Area Health Service level. Generally speaking, reliance is placed upon wider studies of incidence and prevalence without focusing on treated prevalence rates and other crucial data. At this stage the Department of Health requires service plans for each enhancement area which are quite simplistic and evaluated annually. It is also noted that while some of these additional resources are directed to treatment services there is a major emphasis on prevention and early intervention which would be well served by the collection of local data.

As Area Mental Health Services have not adopted all the characteristic elements of a public health model they are left without adequate information to support planning, priority setting, resource allocation and outcomes evaluation. This is paradoxical when every Area Health Service in the state has a Population Health Unit which provides high quality information on disease and disablement - with the exception of a wide range of mental health epidemiological information. The lack of this information is particularly evident in the areas of needs identification, resourcing levels, high risk populations, related workforce requirements and evaluation of treatment outcomes. Currently such information, if available, is disaggregated between the National Mental Health Survey, Cost Data Collection, Unaudited Annual Return and multiple special project reports.



## CONCLUSION

Planning must allow for the review of outcomes of care. It is only by identifying outcomes both qualitatively and quantitatively that it becomes possible to measure how effectively treatment and rehabilitation services are meeting the needs of individuals.

## DISCUSSION

Since the commencement of this critical review the stakes have been raised considerably. Landmark reports by the World Health Organisation (1996) and the United States Department of Health and Human Services have highlighted the massive personal and community burden associated with mental illness. The reports have highlighted the requirement for a more strategic and better-informed approach to research, planning and resource allocation. Serious concern was expressed at the absence of a concerted international approach.

The Surgeon General of the United States, Dr David Satcher, recently released the first ever report (1999) by his office concerning mental health. Satcher lamented that while the past century had witnessed extraordinary progress in the improvement of public health, mental health and mental illness had been relegated to the rear of the national consciousness. He observed that tragic and devastating mental illnesses such as schizophrenia, depression, bipolar disorder, alzheimer's disease and a variety of other conditions continued to be spoken of in whispers and with shame. Satcher acknowledged the huge personal and economic cost to the world and the United States and cited the mental health field as being plagued by disparities in the availability and access to services. He observed there was an urgent need for the community to understand that mental health was fundamental to health and emphasis increasingly needed to be placed on research to increase

the knowledge base for prevention and treatment. Satcher identified a population-based public health model as the vehicle to drive wide improvements in the mental health area.

This is one of the key findings of this critical review - mental health services internationally have failed to develop within a coherent, unambiguous public health framework characterised by epidemiologic surveillance, health promotion, disease prevention and universal access to services. Confusion and fundamental disagreement concerning the aetiology, diagnosis and treatment of mental illness coupled with stigma and discrimination has caused a low priority compared to physical health. Satcher noted in established market economies such as the United States mental illness is the second leading cause of disability and premature mortality. Despite efforts by mental health professionals, carers and consumers, it took the landmark report by the World Health Organisation (1996) to draw the full attention of the international community to this devastating situation.

The reasons why mental health and mental illness are in this position at the start of the third millenium are complex. Satcher has highlighted the issue of stigma and perhaps this extends past the general community and into the scientific community. This situation has only started to change recently and Satcher placed great emphasis and hope on 'integrative neuroscience and molecular genetics,' as central to identifying causes of mental illness. In particular, he made the point that all

psychosocial experiences are recorded in the brain and that all psychological phenomena reflect biological processes - therefore human experience, brain and mind are inseparable. With the advances in genetics, neurochemistry and medical imaging it is becoming increasingly possible to demonstrate biochemical changes evident in the human brain under certain conditions. While this 'biological' model will fail to win complete support from all sections of the mental health community, it is noteworthy that medicine is turning increasingly to science for answers. The point is that historically a tiny amount of the health research budget has gone to researching the aetiology of mental illness which has been something of a Cinderella compared to the high profile research into cancer, cardiovascular disease and other conditions.

A public health approach is based on several critical elements. The fundamental and overarching model is scientific with a requirement to accurately describe the characteristics of a disease including aetiology, incidence, prevalence, clinical picture and treatment. A lack of standardisation in describing the clinical characteristics of mental illness has caused significant difficulties in recording and coding information. In practice there must be a capacity to count health events. These health events must be universally recognised and capable of being coded. It then becomes possible to identify associations and generate hypotheses to explain the causes and patterns of disease distribution. While epidemiologists have traditionally been occupied with the identification of the causes of disease and its

distribution the potential contributions of the discipline have been expanded particularly through the work of individuals such as Jeremy Morris (1964).

Historically, there is little evidence to suggest that the principle uses of epidemiology have been maximally applied to psychiatry at least when compared with physical health and illness. This is borne out by the differences in the major disease classifications, the International Classification of Diseases and the Diagnostic Statistical Manual. Until recently in the area of psychiatry each system contained mental disorders that were not recognised in the other. Through an international effort under the auspices of the World Health Organisation it is now possible to cross-code between the two systems which are becoming closer aligned. This does not mean that previously symptoms were different according to location but rather that the way of describing and attributing them was different. With an increased emphasis on research within psychiatry it has become paramount that there be greater accuracy and consistency in diagnosis to facilitate counting and measurement. Psychiatry has traditionally relied on good powers of clinical observation and many mental disorders run longitudinal courses which may not be strictly categorical. For this reason greater emphasis is now placed on minimum set criterion being established in order to make a diagnosis. It is essential that this process has good clinical acceptance but it is equally important if mental health is to benefit from a major philosophy emerging within health systems in Australia and internationally. This is the dictum of 'capacity building.'

Hawes (2000) defined this approach as the capacity to deliver high quality responses to particular health problems. As a model it fits neatly within a public health framework and epidemiology due to its reliance on identifying major public health concerns, estimating their impact and mobilising clinically-effective programs. It places great emphasis on the initial identification and measurement of casual factors and the evaluation of interventions. Hawes argues that the assessment and measurement of indicators of capacity building will indicate whether the system under development is likely to be effective in addressing the specific health concern. The concepts underpinning capacity building have been converted into process indicators including the availability and strength of information systems, data standards, quality of decision making, resource commitments and skills base available to assist in the implementation or execution of the particular project.

Mental health will be increasingly subject to this approach and the underlying principles are complementary to Morris' (1964) uses of epidemiology. It is particularly relevant to his third use of studying, the working of health services with a view to their improvement. Ritchie et al (2000) have summarised the principles for sustainable capacity building as:

- matching the system and the people

- paying attention to the clinical demand side
- working within the local context
- creating linkages between people and institutions
- training agents of change
- community capacity building
- working from both top down and bottom up

Zonta et al (2000) have identified the public health infrastructure required for effective capacity building as surveillance and information systems, a knowledgeable and skilled workforce, research and development, legislation, policy, planning and management systems. Increasingly mental health will be required to demonstrate a capacity to mount, implement and evaluate well-targeted interventions whether they be focused on prevention, early intervention, treatment or rehabilitation. This will place increased pressure on mental health services to deliver the goods in a comparable way to other areas within the health portfolio. In this process it is essential that mental health is involved in the formative stage in establishing general directions, goals and evaluation strategies. Morris' (1964) uses of epidemiology have great utility in this regard, providing an excellent overall framework to guide and co-ordinate future development.

## RESULTS

It is apparent from this critical review that mental health services, not only in Australia, but internationally have developed a dissimilar fashion to other areas of public health. It is possible to identify the factors responsible and the underlying reasons. It is also apparent that the entire spectrum of mental illness is under review due to the belated recognition of the vast extent of associated disability and morbidity. This is in no small part due to the work of epidemiologists and clinicians who have been able to demonstrate conclusively that society as a whole must come to terms with this major health problem and develop a much stronger scientific base to guide future development. This, however, is of little value if the growing evidence base for identifying, prioritising and managing need is not picked up and reflected in clinical practice - the issue of poor uptake and dissemination. There is a clear risk that having recognised the neglect of the mentally ill and having moved rapidly to develop important initiatives such as MH-CASC, MH-CCP and MH-OAT that there will be resistance in implementation. There is an urgent requirement to contextualise these and other key projects within a coherent mental health public health model or run the risk of their being regarded as disjointed and abandoned. As so eloquently expressed by Waddell (2001) there is an urgent requirement to develop structures and processes - connective tissue - to explicitly facilitate the flow of relevant information and influence between all the concerned parties or stakeholders. This work coherently argues that the



appropriate overall framework (connective tissue) to achieve this is Morris' (1964) uses of epidemiology or a similar model. These principles have greatly extended the potential contributions of epidemiology to service development and are generally accepted within other areas of public health. As progress has been made in the development of case defining technologies within mental health there are fewer obstacles to their wider implementation. This requires urgent recognition at government and senior public service level and the commencement of a long term marketing strategy for stakeholders. In this case 'the proof of the pudding is in the eating' and as relevant, timely data becomes available and is linked to clearly understood corporate objectives (national, state and local) so will endorsement follow. The specific results therefore are:

- Mental health services have failed to maximise the use of Morris' (1964) uses of epidemiology or any equivalent model to identify clinical priorities, guide resource allocation and outcomes evaluation. This is in marked contradistinction to other areas of public health. While historically there have been good 'technical' reasons for this it is no longer the case.
- Morris' uses harmonise, complement and extend the elements of a public health model for needs identification, measurement, surveillance and evaluation. While traditionally a public health model inclusive of epidemiological surveillance has been associated with physical health and

illness there are strong arguments for its wider incorporation into a model for mental health services.

- Mental health services development has suffered due to a period of isolation from the wider scientific community. Within medicine, psychiatry was marginalised which in turn contributed to the stigma surrounding mental illness and the mentally ill. Serious deficiencies internationally in describing and classifying various mental disorders have only been addressed in the last part of the 20<sup>th</sup> century. The areas of disability measurement and outcomes evaluation are gradually evolving.
- A lower priority in funding, policy development and research has been accorded mental illness compared to other areas within medicine. Internationally, and within Australia substantial efforts are being made to address this deficiency.
- This lower priority has, in part, contributed to a paucity of reliable epidemiological information leading to harsh criticism by some authorities such as Rubin (1996). Lack of information has contributed to a reduced awareness of the enormous morbidity associated with mental illness.

- Internationally, significantly greater levels of research are being undertaken into integrative neuroscience and molecular genetics to find the causes of mental illness and more effective treatments. Emphasis also continues to be placed on the social epidemiology of mental illness and the implications for prevention, treatment and rehabilitation.
- Sartorius (1996) observed that at the end of the 20th century treatment is demanded, effective and affordable for many mental illnesses yet remains unavailable to whole sections of the world population.
- There is a growing literature reviewing the functioning of treatment systems against minimum standards. This information needs to be more accessible to planners, clinicians and administrators to guide their endeavours and to ensure the adoption of best evidence-based approaches.
- There is an urgent requirement to standardise information collection at the national, state and area health service level. This information should be incorporated at a number of reporting levels for different purposes. Local area health service data requirements will be greater in order to inform service operation in a dynamic manner. In particular, this applies to needs assessment, planning, resource allocation, evaluation and workforce training. Wherever possible, data collection should be streamlined to avoid

duplication and collection should be aligned wherever feasible with clinical assessment functions.

- Outcomes assessment in mental health has historically received a low priority and has inherent methodological complexities. Outcomes assessment is multifaceted and no one assessment instrument can measure every potential aspect. There is a requirement for greater discernment in the selection and use of instruments with awareness of the respective strengths and limitations in clinical practice.
- The broad approach to assessment of impairment, disabilities and handicap as a consequence of mental illness requires higher priority. As part of this assessment it is important to also ascertain individual strengths which may assist in treatment and rehabilitation. Consumers of mental health services must be actively involved in the preparation of their individual service plans which, while symbolically important, also demonstrates ownership and commitment to recovery.

## RECOMMENDATIONS

These must be viewed in the context that mental health services in Australia are undergoing a metamorphosis. The rapid rate of change initiated by the National Mental Health Strategy (1992) has resulted in all states and territories reviewing their mental health services in the light of what is considered to be emerging best practice. The reports published annually by the Commonwealth have shown variable progress between states in relation to the reform process. It is important therefore to consider the following recommendations in the light of these changes and the hitherto detailed results of this critical review. Clearly there is an urgent requirement to propose and implement a national model for service development beyond the National Mental Health Strategy as once this reform process has run its course there will no longer be a requirement for detailed mandatory reporting which assists in structuring services. It is beyond argument that mental illness and its impact on individuals, families and the wider community will not lessen but rather increase. The recommendations arising from this critical review aim to propose an overall framework to guide future development. While they are relevant to all jurisdictions they are of particular value to Area Health Services:

- The philosophy underlying mental health services be closely aligned with the elements of a public health model including epidemiological surveillance, health promotion, prevention and universal access to services.

- Morris' (1964) uses of epidemiology or an equivalent model be incorporated as an overall framework to guide and inform the key activities of clinical priority setting, resource allocation and outcomes evaluation with a particular focus on reviewing and analysing epidemiological and clinical data that can be obtained from the large populations of patients already receiving care in the public health system. This should not detract from addressing the wider area of unmet need, related prevention strategies and framework.
- Due to the importance of high quality data the National Mental Health Information Development Project (1997) be communicated and marketed more strongly and coherently to ensure greater understanding and commitment to implementation. Educational programs should be undertaken with all staff employed by Area Mental Health Services to increase awareness of the implications of key projects such as the National Minimum Data Set, MH-CASC, MH-CCP and MH-OAT.
- Given the extent of mental illness and associated disability in the community, each Area Health Service establish a mental health epidemiology unit with a similar role to Area Health Service Population Health Units. An alternative would be to expand the latter to undertake a mental health epidemiology function.

- Mental health epidemiology units be supported by a reference group comprising administrators, clinicians and planners. This group should assist in the development of report specifications and also review these reports and provide relevant feedback to other mental health personnel.
- All Area Health Services in New South Wales be required to publish an annual report. This report should use Morris' (1964) uses of epidemiology as a reporting framework thereby incorporating local data into the processes of planning and service development.

## REFERENCE LIST

- Alderson, M. (1983), *"An Introduction to Epidemiology"*, McMillan, London.
- Alloy, L., Acocella, J., Bootzin, R. (1996), *"Abnormal Psychology Current Perspectives"*, McGraw Hill, New York.
- Amos, B (1990), *"Health in New South Wales - Current Indicators"*, New South Wales Health Department, Sydney.
- Andrews, G., Peters, L., Teeson, M. (1995), *"Measurement in Consumer Outcome in Mental Health"*, Clinical Research Unit for Anxiety Disorders, Sydney.
- Andrews, G., (1997), *"Psychological Medicine: A Comparison to Management of Mental Disorders"*, Wild and Woolly, Sydney.
- Andrews, G. (1997), *"Managing Scarcity: A Worked Example Using Burden and Efficacy"*, Australasian Psychiatry, Vol.5, Melbourne.
- Anthony, P. (1996), *"Mental Health Casemix Classification in the United Kingdom"*, NHS Publication, London.
- Anthony, W., Cohen, M., Farkas, M. (1982), *"A Psychiatric Rehabilitation Treatment Program: Can I Recognise One If I See One?"*, Community Mental Health Journal, Vol. 18, Boston.
- Armstrong, B. (1992), *"Public Health, Epidemiology and Health Services"*, University of New South Wales Paper, Sydney.
- Armstrong, B. (1983), *"Epidemiology of Cancer in Australia"*, The Medical Journal of Australia, Vol. 142.
- Australian Health Ministers Conference (1997), *"Report of Proceedings"*, NSW Health Department Publication, Sydney.
- Australian Hospitals Association (1994), *"Mental Health - Future Directions"*, Paragon Printing, Canberra.
- Australian Institute of Health and Welfare (1994), *"Australia's Health"*, Australian Government Publishing Service, Canberra.
- Australian National Association for Mental Health (1989), *"Mental Health in Australia"*, Vol. 2, No. 1, Sydney.



**Bebbington, P. (1997), *"Psychiatric Epidemiology and Social Psychiatry at the Turn of the Century"*, Social Psychiatry and Psychiatric Epidemiology Journal, Vol. 32, Springer, Germany.**

**Ben Tovin, D. Elzinga, R., Burgess, P. (1994), *"Casemix Classification for Mental Health and Substance Abuse"*, Australian Casemix Clinical Committee Report, Canberra.**

**Boyce, P. (1997), *"Symposium on Money and Psychiatry"*, Australasian Psychiatry, Vol. 5, Melbourne.**

**Burdekin, B. (1993), *"Report of the National Inquiry into the Human Rights of People with Mental Illness"*, Australian Government Publishing Service, Canberra.**

**Callaly, T., Hollis, G., Hartz, P., Faulkner, P. (1997), *"The Imperative of the Redevelopment of Patient Record Systems for Use in Mental Health Services"*, Australasian Psychiatry, Vol. 5, Melbourne.**

**Calman, K. (1994), *"Review of the National Health Service"*, Journal of Medical Ethics, Vol. 20, London.**

**Clayton, A. (1999), *"Report of National Mental Health Information Development Project, 1998-2003"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1992), *"Better Health Outcomes for Australians"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1992), *"National Mental Health Plan"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1992), *"National Mental Health Strategy"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1992), *"Towards a National Health Policy"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1994), *"Better Health Outcomes for Australians"*, Australian Government Publishing Service, Canberra.**

**Commonwealth Department of Human Services and Health (1994), *"National Mental Health Report"*, Australian Government Publishing Service, Canberra.**

- Commonwealth Department of Human Services and Health (1994), *"Towards a National Health Policy"*, Australian Government Publishing Service, Canberra.
- Commonwealth Department of Human Services and Health (1995), *"Mental Disorders Prevention and Human Services Research"*, Australian Government Publishing Service, Canberra.
- Commonwealth Department of Human Services and Health (1998), *"Mental Health Classification and Service Costs Project"*, Australian Government Publishing Service, Canberra.
- Commonwealth Department of Health & Family Services (1997), *"National Standards for Mental Health Services"*, Australian Government Publishing Service, Canberra.
- Commonwealth Department of Health & Family Services (1997), *"Evaluation of the National Mental Health Strategy"*, Australian Government Publishing Service, Canberra.
- Commonwealth Department of Health and Family Services (1998), *"Mental Health and Well Being - Profile of Adult Australians"*, Canberra.
- Commonwealth Department of Health and Aged Care (1999), *"Mental Health Information Development - National Information, Priorities and Strategies Under the Second National Mental Health Plan, 1998-2003"*, Canberra.
- Der, G., Gupta, S., Murray R. (1995), *"Is Schizophrenia Disappearing?"*, Lancet, Vol. 335.
- Dickerson, F. (1997), *"Assessing Clinical Outcomes - The Community Functioning of Persons with Serious Mental Illness"*, Psychiatric Services, Vol. 48, Washington.
- Edwards, A (1968), *"Patients Are People"* Currawong Publishing, Sydney.
- Fanning, P. (1996), *"Incidence of Postnatal Depression in the Mid Western Area Health Service"*, Area Publication, Orange.
- Fanning, P., Hoskin, J. Prusiak, B. (1997), *"Evidence for a Central Drift Factor"*, Unpublished Area Planning Paper, Orange.
- Fanning, P., Hoskin, J., Prusiak, B. (1997), *"Multiple Re-admissions to Mental Health Service Inpatient Facilities"*, Unpublished Area Planning Paper, Orange.
- Faris, R., Dunham, H. (1934), *"The Chicago Study of First Hospital Admissions for Schizophrenia"*, Synopsis of Psychiatry, Williams and Williams, New York.

- Fletcher, R., Fletcher, S., Wagner, E. (1976), *"Clinical Epidemiology - The Essentials"*, Williams and Wilkins, Baltimore.
- Fowler, I., Carr, V., Carter, N., Lewin, T. (1998), *"Patterns of Current and Lifetime Substance Abuse in Schizophrenia"*, Schizophrenia Bulletin.
- Friedman, G. (1980), *"A Primer of Epidemiology"*, McGraw Hill, New York.
- Gittlesolin, A. (1976), *"Epidemiology as a Fundamental Science"*, Oxford University Press, London.
- Glover, G., Leese, M., McCrone, P. (1999), *"More Severe Mental Illness is More Concentrated in Deprived Areas"*, British Journal of Psychiatry, Vol. 175.
- Goodman, L. and Goodman, M. (1986), *"Prevention - How Misuse of a Concept Undercuts its Worth"*, Hastings Centre Report, April, Vol. 16.
- Hall, W., Farrell, M. (1997), *"Co-morbidity Between Substance Use and Other Mental Disorders"*, National Drug and Alcohol Research Centre, Canberra.
- Hafner, H. A. (1993), *"Generating and Testing a Casual Explanation of the Gender Difference in Age at First Onset of Schizophrenia"*, Psychological Medicine, Vol. 23.
- Hannaford, J. (1989), *Leading the Way - A Framework for NSW Mental Health Services 1991-2000*, NSW Health Department, Sydney.
- Hannaford, J. (1991), *"Blueprint for Mental Health Services - An Introduction"*, NSW Health Department Publication, Sydney.
- Harding, C. (1997), *"The Limited Resources Debate: Challenging the Rules of the Game to a Win-Win Scenario"*, Australasian Psychiatry, Vol. 5, Melbourne.
- Howe, P. (2000), *"Capacity Building: For What?"*, NSW Health Department Public Health Bulletin, Vol. 11, No. 3.
- Heinze, M., Taylor, R., Priebe, S., Thornicroft, G. (1997), *"The Quality of Life of Patients with Paranoid Schizophrenia in London and Berlin"*, Social Psychiatry and Psychiatric Epidemiology, Vol. 32.
- Henderson, A. (1996), *"The Present State of Psychiatric Epidemiology"*, ANZ Journal of Psychiatry, Vol. 30, Canberra.
- Henderson, S. (1996), *"The Present State of Psychiatric Epidemiology"*, Australian and New Zealand Journal of Psychiatry, Vol. 30.

- Hetel, B. (1985), *"The Uses of Epidemiology"* in White, K. L. *"Epidemiology Comes of Age"*, The Medical Journal of Australia, Vol. 142.
- Holland, V., Gilderdale, S. (1977), *"Epidemiology and Health"*, Kimpton Publishers, London.
- Holland, W., Gilderdale, S. (1997), *"Epidemiology and Health"*, Henry Kimpton, London.
- Hollingshead, A., Redlich, F. (1958), *"Social Class and Mental Illness"*, Wiley, New York.
- Houston, J. (1995), *"A Short Textbook of Medicine"*, English Universities Press, London.
- Howells, J. (1975), *"World History of Psychiatry"*, Brunner Mazel, New York.
- Hugh, G. (1997), *"Report of Taskforce on Comorbidity"*, NSW Health Department Publication, Sydney.
- Institute of Health and Welfare (1994), Fourth Biennial Report, Canberra.
- Institute of Medicine (1994), *"Reducing Risks for Mental Disorders"*, National Academy Press, New York.
- Jenkins, R. (1990), *"Towards a System of Outcome Indicators for Mental Health Care"*, British Journal of Psychiatry, Vol. 157.
- Jenkins, R., Griffiths, S. (1991), *"Indicators for Mental Health in the Population"*, HMSO, London.
- Kaplan, H., Saddock, B., Grebb, J. (1994), *"Synopsis of Psychiatry"*, Williams and Wilkins, New York.
- Kaplan, H., Saddock, B. (1996), *"Synopsis of Psychiatry - Behavioural Sciences and Clinical Psychiatry"*, Williams and Wilkins, Baltimore.
- Kendler, K., Kessler, R., Neale, M., Heath, A., Eaves, P. (1993), *"The Prediction of Major Depression in Women: Towards an Integrated Aetiologic Model"*, American Journal of Psychiatry, Vol. 150, New York.
- Kerr, L. (1985), *"Epidemiology Comes of Age"*, Medical Journal of Australia, Vol. 142, Sydney.

- Kessler, R., McGonagle, K., Zhao, S., Nelson, C., Hughes, M., Wittchen, S., Kendler, K. (1994), *"Lifetime and 12 Month Prevalence of DSM-III-R Psychiatric Disorders in the United States"*, Archives of General Psychiatry, Vol. 51, New York.
- Kleinman, A., Cohen, A. (1997), *"Psychiatry's Global Challenge"*, Scientific American, March Edition, New York.
- Klerman, G. (1988), *"Evidence for Increase in Depression Among Adolescents and Young Adults"*, British Journal of Psychiatry, Vol. 152.
- Krupinski, J. (1990), *"A Community Health Survey of Heyfield, Victoria"*, Medical Journal of Australia, Vol. 4.
- Lawson, I. (1991), *"Public Health - Australia"*, University of New South Wales, Sydney.
- Lambert, C. (1982), *"Risk Factors and Lifestyle: A Statewide Interview Health Survey"*, New England Journal of Medicine, Vol. 306.
- Leeder, S. (1992), *"Public Health as an Alternative Path to Better Health in Australia"*, Public Health Association Paper, Brisbane.
- Leighton, D., Harding, J., Macklin, D., MacMillan, A., Leighton, A. (1963), *"Psychiatric Findings of the Stirling County Study"*, American Journal of Psychiatry, Vol. 119, New York.
- Lilienfeld, A., Lilienfeld, D. (1980), *"Foundations of Epidemiology"*, OUP, New York.
- Magnus, P. (1999), *"Still Pursuing a Cause"*, Access, Australian Institute of Health and Welfare, Canberra.
- Manderscheid, R., Pirkis, J. (1997), *"Evaluation of the National Mental Health Strategy"*, Australian Government Publishing Service, Canberra.
- Marks, I. (1996), *"A Computerised System to Measure Treatment Outcomes and Costs"*, Psychiatric Services, Vol. 47, London.
- Martin, J., Blum, T., Beach, S., Roman, P. (1996), *"Subclinical Depression and Performance at Work"*, Social Psychiatry and Psychiatric Epidemiology, Vol. 31, Springer, Germany.
- McGorry, P. (1997), *"Who Should be Treated? Burden Vs Health Gain"*, Australasian Psychiatry, Vol. 5, Melbourne.

- McMahon, E., Pugh, T. (1977), *"Epidemiology - Principles and Methods"*, Little Brown and Co., Boston.
- Michels, R., Mazaruk, P. (1993), *"Progress in Psychiatry"*, The New England Journal of Medicine, Vol. 329, Boston.
- Mid Western Area Health Service (1998), *"Report of the Statistics Unit"*, Area Health publication, Bathurst.
- Mid Western Area Health Service (2000), *"Report of Rural Youth Suicide Initiative"*, Area Health publication, Bathurst.
- Mid Western Area Health Service (1999), *"Report on Implementation of the Triple P"*, Area Health publication, Bathurst.
- Mid Western Area Health Service (2000), *"Report on Implementation of School-Link"*, Area Health publication, Bathurst.
- Mid Western Area Health Service (1999), *"Report on Audit of Prevalence of Dual Disorder"*, Area Health publication, Bathurst.
- Morris, J. (1964), *"Uses of Epidemiology"*, Livingstone, Edinburgh.
- Morris-Yates, A., Andrews, G. (1997), *"Local Area Information Systems for Mental Health Services: General Principles and Guidelines. Developing Outcome Oriented Information Systems for Mental Health Services"*, Discussion Paper No. 1, Commonwealth Department of Health and Family Services, Canberra.
- Murphy, E. (1991), *"After the Asylums"*, Faber & Faber, London.
- Murray, R., O'Callaghan, E., Castle, D. (1992), *"A Neurodevelopmental Approach to the Classification of Schizophrenia"*, Schizophrenia Bulletin, Vo. 18.
- New South Wales Health Department (1993), *"A Resource Allocation Formula for the NSW Health System"*, State Health Publication, North Sydney.
- New South Wales Health Department (1997), *"Annual Report 1996/97"*, State Health Publication, North Sydney.
- New South Wales Health Department (1997), *"Caring for Mental Health - Draft"*, State Health Publication, North Sydney.
- New South Wales Health Department (1999), *"Department of Health Reporting System"*, State Health Publication, Sydney.

- New South Wales Health Department (1992)**, *Public Health Bulletin*, Sydney.
- New South Wales Health Department (1997)**, *"Health Economic Reform"*, State Health Publications, North Sydney.
- New South Wales Health Department (1996)**, *"Implementation of the Economic Statement for Health"*, State Health Publication, North Sydney.
- New South Wales Health Department (1990)**, *"Leading the Way - a Framework for Mental Health Services"*, State Health Publications, Sydney.
- New South Wales Government (1990)**, *"Mental Health Act"*, NSW Government Publication, Sydney.
- Raphael, B. (1997)**, *"Caring for Mental Health"*, NSW Health Department Publication, Sydney.
- Raphael, B (2000)**, *"National Mental Health Information Development Program"*, NSW Health Department. Sydney.
- Raphael, B (1993)**, *"Scope for Prevention in Mental Health"*, AGPS, Canberra.
- Rawson, J. (1994)**, *"Basic Concepts of Epidemiology"*, University of New South Wales, Sydney.
- Reid, M. (1996)**, *"Health Economics Reform"*, NSW Health Department, Sydney.
- Rennie, T., Srole, L., Michael, S., Opler, M. (1962)**, *"The Midtown Manhattan Study"*, McGraw Hill, New York.
- Richmond, D. (1995)**, *Report of the Enquiry into Services for the Mentally Ill and Developmentally Disabled"*, State Health Publication, Sydney.
- Ritchie, J., Nathan, S., Mehaffey, A. (2000)**, *"Capacity Building for International Health Gains"*, NSW Health Department Public Health Bulletin, Vol. 11, No. 3.
- Robins, L., Regier, D. (1985)**, *"Psychiatric Disorders in America"*, Free Press, New York.
- Robins, L., Regier, D. (1991)**, *"Psychiatric Disorders in America"*, Free Press, New York.
- Royal Australian and New Zealand College of Psychiatrists (1996)**, *"Care Evaluation Program - Clinical Indicators"*, Carlton.

- Rubin, G (1992), *"Clinical Applications of Epidemiology"*, Public Health Bulletin, Vol. 3, NSW Health Department.
- Rubin, G. (1996), *"Report to the Chief Health Officer"*, NSW Health Department, Sydney.
- Ryle, J. (1948), *"Changing Disciplines"*, OUP, New York.
- Sargent, M. (1994), *"The New Sociology for Australians"*, Longman Cheshire, Sydney.
- Sarrento, O., Oresvold, T., Gostas, G., Christiansen, L., Lindhandt, A., Lonnerberg, O., Sandlund, M., Hansson, L. (1996), *"The Nordic Comparative Study on Sectorised Psychiatry"*, Social Psychiatry and Psychiatric Epidemiology, Vol. 31, Springer, Germany.
- Sartorius, N. (1996), *"Paradoxes Besetting Psychiatry and Mental Health"*, World Psychiatric Association Conference, Madrid.
- Satcher, D. (1999), *"Scientific Revolution in Mental Health Research and Services Declared in First Surgeon General's Report on Mental Health"*, United States Department of Health and Human Services Publication, Washington.
- Scanlon, K., Raphael, B. (2000), *"Building Capacity to Promotion Prevention, and Early Intervention in Mental Health"*, NSW Health Department Public Health Bulletin, Vol. 11, No. 3.
- Schreter, R. (1997), *"Psychiatric Care for the 21<sup>st</sup> Century"*, Psychiatric Services, Vol. 48, Washington.
- Shephard, G., Murray, A., Muijen, M. (1994), *"Relative Values"*, The Sainsbury Centre for Mental Health, London.
- Shepherd, G., Beadsmore, A., Moore, C., Hardy, P., Mujien, M. (1997), *"Relation Between Bed Use, Social Deprivation and Overall Bed Availability in Acute Adult Psychiatric Units and Alternative Residential Options"*, BMJ, Vol. 314, London.
- Shepherd, G., Geadsmore, A. (1997), *"Mental Health Services"*, National Health Service Handbook, London.
- Smith, G., Manderscheid, R., Flynn, L., Steinwacks, D. (1997), *"Principles for Assessment of Patient Outcomes in Mental Health Care"*, Psychiatric Services, Vol. 8, Washington.



- Solomon, S., Buckingham, B., Epstein, M. (1993), *"Report of Consultancy for the Mental Health Workforce Committee on Medical Workforce Financing Arrangements"*, Australian Government Publishing Service, Canberra.
- South Western Sydney Area Health Service (1999), *Strategic Plan for Mental Health Promotion*, Area Health Publication, Sydney.
- Srebink, D., Uehara, E., Smukler, M. (1998), *"Field Test of a Tool for Level of Care Decisions in Community Mental Health Systems"*, Psychiatric Services, Vol. 49, Washington.
- Stein, L., Test, M. (1992), *"Innovative Community Mental Health Programmes - New Directions for Mental Health Services"*, Jossey Bass, San Francisco.
- Stevens, A., Raftery, J. (1994), *"Health Care Needs Assessment"*, Radcliffe Medical Press, Oxford.
- Sullivan, G., Young, A., Morgenstein, H. (1997), *"Behaviours as Risk Factors for Rehospitalisation"*, Social Psychiatry and Psychiatric Epidemiology Journal, Vol. 32, Springer, Germany.
- Susser, J. (1973), *"Casual Thinking in Health Sciences"*, OUP, New York.
- Tansella, M. and Thornicroft, G. (1996), *"Extending the Use of Standardised Instruments in Mental Health Service Research"*, Social Psychiatry and Psychiatric Epidemiology Journal, Vol. 31, Springer, Germany.
- Terris, M. (1985), *"The Changing Relationships of Epidemiology and Society"*, The Robert Cruikshank Lecture, Journal Public Health Policy.
- Tobin, M. (1997), *"Money Management and Outcomes: The New Challenge"*, Australasian Psychiatry, Vol. 5, Melbourne.
- Tuckett, D. (1976), *"An Introduction to Medical Sociology"*, Tavistock, London.
- Ustun, T., Cooper, J. Van Duuren-Kristen, S., Kennedy, C., Hendershot, G., Sartorius, N. (1994), *"Revision of the ICIDH: Mental Health Aspects"*, Disability and Rehabilitation, Vol. 00, Geneva.
- Waddell, C. (2001), *"So Much Research Evidence So Little Dissemination and Uptake: Mixing the Useful with the Pleasing"*, Evidence Based Mental Health Journal, BMJ Publishing, Vol. 4, London.
- Wallace, C. (1986), *"Functional Assessment in Rehabilitation"*, Schizophrenia Bulletin, Vol. 12, New York.

- Watson, D. (1996),** *"Opening the Doors - Looking Back to Look Forward"*, Canadian Journal of Psychiatry, Vol. 41, Quebec.
- Weiss, N. (1986),** *"Clinical Epidemiology - The Study of the Outcome of Illness"*, Oxford Press, New York.
- White, K., Henderson, M (1976),** *"Epidemiology as a Fundamental Science: Its Use in Health Services Planning, Administration and Evaluation"*, OUP, New York.
- Whiteford, H. (1997),** *"Socioeconomic Context of Mental Health Funding"*, Australasian Psychiatry, Vol. 5, Melbourne.
- Wing, J. (1996),** *"SCAN and the PSE Tradition"*, Social Psychiatry and Psychiatric Epidemiology Journal, Vol. 31, Springer, Germany.
- Wilson, J. (1997),** *"President's Letter"*, Australasian Psychiatry, Vol. 5, Melbourne.
- Wing, J., Cooper, J., Sartorius, N. (1974),** *"The Measurement and Classification of Psychiatric Symptoms"*, Cambridge University Press, Cambridge.
- Woolridge, M. (1996),** *"National Mental Health Report Overview"*, Australian Government Publishing Service, Canberra.
- Woolridge, M. (1996),** *"Foreword National Mental Health Report"*, Australian Government Publishing Service, Canberra.
- World Health Organisation (1996),** *"The Global Burden of Disease"*, Harvard University Press, Boston.
- World Health Organisation (1997),** *"Management of Mental Disorders"*, Fast Books in Print, Glebe.
- Wyn Owen, J. (1993),** *"A Resource Allocation Formula for the NSW Health System"*, NSW Health Department, Sydney.
- Wyn Owen, J. (1993),** *"A Revision of the Program 2.3 Resource Allocation Formula"*, NSW Health Department, Sydney.
- Wyn Owen, J. (1994),** *"The Efficiency Index for Forward Estimates"*, NSW Health Department, Sydney.
- Wyn Owen, J. (1996),** *"Caring for Health Equity, Efficiency, Quality"*, NSW Health Department, Sydney.

**Zonta, D., Wilson, A. (2000),** *"Capacity Building to Public Health: A Statewide Perspective"*, NSW Health Department Public Health Bulletin, Vol. 11, No. 3.

**Zyla, W. (1998),** *"Annual Report Community Mental Health Services"*, Mid Western Area Publication, Orange.

**APPROVED RESEARCH PROPOSAL**

**DOCTOR OF PUBLIC HEALTH**

**UNIVERSITY OF WOLLONGONG**

# TABLE OF CONTENTS

## DESCRIPTION OF APPROVED RESEARCH PROPOSAL & PROGRAM

	Page
INTRODUCTION.....	1
STATEMENT OF ISSUE.....	5
• Aim .....	5
• Objectives and Submission Date.....	5
 <i>Chapter 1: 1996</i> .....	5
<i>Chapter 2: 1997</i> .....	5
<i>Chapter 3: 1998</i> .....	5
<i>Chapter 4: 1999 &amp; 2000</i> .....	6
 • Significance of Critical Review .....	7
• Methods and Materials .....	9
• Limitations of Critical Review .....	11
 Chapter 1: Overview.....	13
Chapter 2: Overview.....	19
Chapter 3: Overview.....	25
Chapter 4: Overview.....	28
 • Statement of the Context of the Problem .....	30
• Sub Categories for Description and Costing .....	31
• Prevalence and Incidence Rates for Mental Illnesses .....	32
• Using Clinicians to Generate Data/Information .....	33
• Effectiveness and Cost-effectiveness of Services.....	34
• Models of Care - An Epidemiological Focus.....	35
• Discussion, Results and Recommendations .....	37

# INTRODUCTION

Historically, mental health services have been marginalised from the mainstream of health care both in Australia and internationally. There are many reasons for this, including the stigma attached to people with mental illness. This is most evident in the growth of psychiatric institutions throughout the last century, and the long-term hospitalisation of hundreds of thousands of mentally ill people. The way that mental illness was treated ensured a degree of suspicion, mystery and even fear. Institutions were usually large and foreboding and often located on the peripheries of cities. This stigma was exploited by the media through its depiction of mentally ill people as being unpredictable, violent and, at best, seriously disorganised.

Another effect of the development of psychiatric institutions was that they became the predominant symbol of mental illness, thus drawing attention away from the fact that many people lived within mainstream society who were afflicted by psychiatric conditions. Society never came to terms with the extent and severity of mental illness 'outside the walls' of the psychiatric hospitals. Furthermore, if somebody became conspicuously mentally ill they were sent to an institution and the concept of community care was never broached seriously until the advent of the deinstitutionalisation and community care movement in the 1960's. Yet, the development of community-based mental

health care has not been adequately supported by politicians, the wider health industry or the community. Psychiatric hospitals were a locus for centralisation of funding that was relatively easy to account for and little was spent on community-based care. With the advent of the National Mental Health Strategy (1992) this is slowly being addressed with the transfer of institutional resources to community settings and the allocation of modest amounts of 'new money' by the states and commonwealth. This is, however, misleading as it suggests implicitly that a resource shift is all that is required to service community need. Because of the focus on psychiatric hospitals and indeed the relatively low priority accorded to psychiatry, little attention has been given to assessing true need. Until recently there has been minimal scientific evidence on incidence and prevalence rates of mental illness in Australia and great reliance placed on international studies, some of which were dated and limited. Even less is known about population predeterminants of mental illness.

Given the competition for the health dollar it is vital that agencies interested in the welfare of the mentally ill accumulate clear evidence of need and the costs to society. This will be progressively used as a basis for argument for an increased share of funding. This is warranted from a primary, secondary and tertiary public health prevention viewpoint.

Whilst identification of true need and clinical priorities is vital, equal attention must be given to outcome evaluation of the various strategies linked to each stage of the early intervention/rehabilitation continuum to justify the resources allocated. It is contended that the best way to achieve these objectives is through the utilisation of the principles underpinning the science of epidemiology. These may be applied to the estimation of true clinical need, resource allocation and outcome evaluation. To achieve these ends there is a need for a coalition of epidemiologists, economists, and mental health professionals involved in the planning, development and implementation of service models. What are the consequences of failure to pursue this approach? In an international economy driven by the ideology of macro and micro-economic reform any area of a health or social welfare service that cannot justify its existence will be vulnerable to wholesale devaluation. This not only applies to mental health, as questions are also being increasingly raised about the public health benefit of high cost technologies.

Mental health is starting from a retarded vantage point. The consequences of failing to advance knowledge of causation and effective treatment should be recognised. The most significant of these is economic marginalisation of mental health services with an associated reduction of priority. Inevitably, governments will adopt a 'fire-fighting approach' - when there is a public outcry about homelessness, the firehose of one-off funding to resolve an immediate crisis will be applied. This would leave sufferers and their carers in a



cycle of despair and, even more so, the whole community would be deprived of the benefits of the giftedness and humanity of an enormous cross-section of the population.

The development of an evidence-based model based on epidemiological principles is one way of ensuring improved measurement of need, systematic allocation of resources and evaluation. It also provides an opportunity for ongoing research into a wide range of related areas.

# STATEMENT OF ISSUE

## Aim

The aim of this critical review is to mount a coherent argument for the greater use of epidemiological principles and methods to guide clinical priority setting, resource allocation and outcome evaluation in mental health services.

## Objectives and Submission Date

**Chapter 1:** A comprehensive overview of epidemiology as utilised to guide the development of health activities internationally. Literature review of 5000 words.

**Chapter 2:** An overview of the current role of psychiatric epidemiology in Australia and internationally. A literature review and interviews with Australian and international authorities. Approximately 10,000 words.

**Chapter 3:** A critical overview of the current approaches to clinical priority setting, resource allocation and outcome evaluation in New South Wales mental health services. Literature review and interviews

with senior public servants in the New South Wales Health Department. Approximately 7,500 words.

**Chapter 4:** A critical evaluation of the application of Morris' uses of epidemiology within an Area Mental Health Service. Approximately 10,000 words.

The research will address the following questions:

- What part does epidemiology play in priority setting, resource allocation, and outcomes evaluation of health services?
- How can an epidemiological approach be made to needs assessment in mental health?
- What status does psychiatric epidemiology currently have in Australia in planning and improving the administration of mental health services?
- How does current policy reflect this in clinical priority setting, resource allocation and outcome evaluation?
- How can mental health policy and service development accommodate the use of epidemiology?

- What are the short and longer term benefits to the community and mentally ill?
- How can Morris' (1964) uses of epidemiology be incorporated at the area health service level to guide the setting of clinical priorities, resource allocation and outcomes evaluation?

## **Significance**

In 1994 the Commonwealth Department of Human Services and Health announced a national approach to improving health outcomes. Cardiovascular disease, cancer, mental illness and injury were chosen as the main areas for attention. National goals, targets and strategies were set for each with the clear intent of improving, over time, the health status of the community. While it was predictable that three of the four areas would be targeted, the inclusion of mental illness was a sign of serious recognition of the importance of this area which had long been ignored. Indeed, when announcing the national program, the then Commonwealth Minister for Human Services and Health noted that the criteria for inclusion included the degree of impact on population health status and the cost to the community of the condition, its treatment and prevention. Importantly, the goals, targets and strategies were to be achieved within a public health framework. This would be a complex process and mental illness was identified as requiring a high degree of

developmental work. The Better Health Outcomes publication (1994) cited a range of critical data. This included international evidence that at least 20 percent of the adult population and approximately 15 percent of young people were affected by mental health problems or disorders at any one time. It also noted that data on prevalence and impact of mental health disorders was limited. In Australia, schizophrenia and other psychoses were estimated in 1989-90 to have incurred \$203 million in direct health costs, depression \$179 million, and suicide \$23 million. These figures do not include amounts spent on pension or sickness benefits and loss of productivity through psychiatric illness and disability. Clearly the personal costs cannot be quantified for consumers and carers.

The report strongly recommended the need to develop a better understanding of causation, clinical outcome measures and a National Minimum Data Set. This included the need for nationally co-ordinated and targeted studies in the general population and in primary care at state, regional and local levels. To facilitate this process a National Mental Health Survey was conducted in 1997.

Raphael (1993) observed that much psychiatric morbidity is chronic or recurrent and in the case of anxiety or depression, new cases contribute less to the overall level than longstanding cases. Furthermore, in establishing priorities for resource allocation, there was a need to understand the issues of impairment, disability and handicap associated with mental illness using a

biopsychosocial approach. This in turn would guide the development of best evidence-based approaches to prevention, early intervention, treatment and rehabilitation.

## **Methods/Materials**

In each stage of this critical review emphasis will be placed upon a comprehensive review of the available literature. This will take the form of detailed analysis of Australian and international source material to establish the current issues relating to planning, priority-setting, resource allocation and outcomes evaluation in mental health services.

The author of this thesis is in a privileged position having been an Area Director of Mental Health Services in New South Wales for the past 16 years. This has allowed unprecedented access to New South Wales Health Department reports. The author has also participated in a number of Commonwealth sponsored working parties including the National Mental Health Information Committee which looked at the need for standardised data definitions and ways of classifying interventions within mental health services. It was through this level of involvement that it became evident that there was no 'template' or 'blueprint' to guide the planning, development and evaluation of mental health services in Australia. There was certainly no standardised system in place to assist area mental health services in Australia in this

process, yet hundreds of millions of dollars were annually committed to providing treatment services. The reasons for this situation are numerous and complex and documented throughout this work.

In 1994 and 1997 the author undertook field visits to the United Kingdom to meet with clinicians in York and at the Sainsbury Centre for Mental Health in London. The Director of the Sainsbury Centre, Professor Geoff Shepherd, and his staff were particularly helpful. It was noted that the United Kingdom was struggling with the same questions - how to identify and prioritise needs to ensure that resources were allocated in the most beneficial manner. The subsequent question then related to methods of evaluation of service effectiveness and how this should occur given the differing requirements of administrators, clinicians and consumers.

Throughout this critical review, the author has also been fortunate to have access to highly positioned individuals within health bureaucracies, including Chief Health Officers and State Directors of Mental Health. As senior government officers they have been able to offer state and national overviews which has contributed to the level of analysis. This alignment of the national and international literature with expert opinion from 'the field' has created a unique opportunity to identify the known and emerging issues and for these to be distilled to their critical elements.

As this work has progressed the national reform process in Australia has continued. Significantly, at the international level, the Surgeon General of the United States, Dr David Satcher, in his landmark report (2000) into mental health services strongly advocated the extension of a population-based public health model with a focus on epidemiological surveillance, disease prevention, early intervention and improved access to services as critical to the future development of mental health services.

The critical review will include a detailed section discussing the emerging issues for health service provision generally, including how mental health is placed to deal with these. Based on analysis of all the material further sections will be incorporated dealing with the results of the critical review and key recommendations.

### **Limitations of Critical Review**

The critical review will not substantially address the important and growing area of primary prevention using a population-based approach. This work is primarily focused on planning, priority-setting, resource allocation and outcomes evaluation as it relates to individuals and populations receiving treatment. The aim is to identify how these critical elements are implemented in an integrated system of care to ensure the maximum benefit. The entire area of primary prevention in mental health is the subject of separate state and commonwealth



initiatives including a large section of the Second National Mental Health Plan and will undoubtedly continue to receive the attention it deserves.

## **Chapter 1: Overview**

### **The Use of Epidemiology to Guide Public Health Services Internationally**

Most standard English dictionaries define epidemiology as the 'science of epidemics'. This is accurate but fails to reflect the gradual movement of epidemiology away from the exclusive study of purely infectious diseases to include chronic illness. Historically, however, epidemiology was concerned with epidemics and was largely practised by medical practitioners with the aim of identifying the causes of disease and removing them. Alderson (1983) viewed epidemiology as the study of the determinants of the incidence and prevalence of disease while Susser (1973) concluded it was the study of the distribution and determinants of the states of health in human populations. Lillienfeld (1980) considered that epidemiology as a science was concerned with the pattern of disease occurrences in human populations and of the factors that influence these patterns. Rawson (1992) noted that as science has gradually assumed greater control over infectious diseases, more attention has been given to the determinants and distribution of non-infective illnesses. Lillienfeld (1980) further observed that epidemiologists are increasingly turning towards the study of 'patterns of disease occurrence', the establishment of what is normal for a community as well as what is abnormal. Increasingly there has been a recognition that patterns of disease causation may be linked intrinsically to

combinations of genetic, biological, social, cultural and psychological factors within an environment. Consequently, alliances have formed with the medical sciences, psychology, sociology and anthropology in unravelling the determinants of health and illness. Tuckett (1976) nominated social causes of disease as one of the most important and poorly understood areas and pointed to the emergence of medical and social geography as a discipline that informs epidemiology and public health approaches.

Morris (1964) is credited by epidemiologists as best defining the actual and potential uses of epidemiology. In summary these were:

- To study the history of the health of populations and the rise and fall of diseases and changes in their character
- To diagnose the health of the community and to measure the present dimensions of ill health, to define problems for community action, their relative importance and priority, to identify vulnerable groups needing special care
- To study the working of health services with the view to their improvement

- To estimate from the group experience what are the individual risks and chances, on average, of disease, accident and defect
- To complete the clinical picture of chronic disease and describe its natural history
- To identify syndromes by describing the distribution, association and dissociation of clinical phenomena in populations
- To search for causes of health and disease

In Australia, State Health Departments have a Population Health Unit responsible for surveillance and monitoring of mortality and morbidity associated with a wide range of illnesses. This information is reported to the Department of Human Services and Health in Canberra, which collates national statistics on incidence and prevalence. Data is routinely collected on more than 40 diseases as well as death due to trauma etc. Significantly, information is not routinely collected on mental illness. Indeed, both the States and Commonwealth have found it difficult to obtain reliable data. Each year in New South Wales the Chief Health Officer produces a report to be tabled in Parliament concerning the health of the people of New South Wales. The March 1996 report aimed to provide a concise account of the health status of the population with particular emphasis on special subgroups and high priority health problems. Specific attention was given to cardiovascular disease, cancer, injury, diabetes, asthma and, for the first time, mental health.

Many countries have a National Centre for Disease Control which provides a range of functions including monitoring and surveillance, collection of statistics for specific disease registers and undertaking research. The World Health Organisation also ensures that data is collected internationally to ensure that it is possible to predict trends and changes in disease incidence and prevalence. Through the availability of this information it has been possible, in a global sense, to set priorities for disease prevention, early treatment and rehabilitation. Research allows governments and Health Departments to

identify those conditions that are of greatest cost to the community in terms of lives lost and people disabled, whether through Malaria or the failure to remove land mines from war zones.

Information allows clinical priority setting to take on greater importance as public health services are increasingly directed towards the targeting of conditions which are largely preventable. A recent example of this is the campaign to increase immunisation rates of children in response to decreasing numbers being vaccinated and a surge in the number of cases of childhood whooping cough etc. At a broader level, in Australia the Commonwealth Government and the Department of Community Services and Health published the 'Better Health Outcomes for Australians' (1994). This was the first bipartisan commitment to a strategy to improving the health of all Australians and the emphasis was placed initially on cardiovascular disease, cancer, injury and mental health. Where it was relatively easy to obtain a wide range of information on the first three conditions, again this was not the situation in mental health where key information was unobtainable.

Through years of epidemiological research it has become straight forward to obtain information on prevalence, incidence and cost to the community of major diseases. This makes it easier for government in consultation with peak groups such as the National Health and Medical Research Council to prioritise conditions for attention. This is particularly important from the point of view

of ongoing resource allocation and subsequent evaluation of short and long-term measures aimed at prevention, early intervention and treatment.

It is apparent therefore that both in Australia and internationally, epidemiology is continuing to have a major impact on the public health system and indeed the wider health of the community. It is not unreasonable to expect therefore that mental health services would also be a beneficiary of this process.

## Chapter 2: Overview

### The Application of Epidemiological Principles in Psychiatry to Guide Clinical Priority-Setting, Resource Allocation and Outcomes Evaluation

A review of most modern texts on psychiatry and abnormal psychology demonstrates little acknowledgment of the use of epidemiology in psychiatry. Two notable exceptions are Kaplan and Saddock (1996) and Bootzin and Acocella (1996). Both devote sections to epidemiology within chapters on research methods and diagnoses. Both note the importance of epidemiological findings in increasing understanding of the factors involved in the pathogenesis of mental illness, and the frequency and distribution of disorders within specific populations. Significantly it is noted that epidemiological findings within one population are not necessarily generalisable to another. Indeed, disease conditions may vary from society to society and culture to culture. Some conditions are unique to certain cultures, eg, 'Amok' in the Malays.

In the hitherto referred to report of the Chief Health Officer of New South Wales (1996), the first sentence in Chapter 7 reads:

"There is currently no information on the prevalence of mental disorders in NSW."



Just as significant is a subsequent statement to the effect that one of the major weaknesses in planning mental health services in Australia is the lack of accurate information on prevalence and incidence of mental disorders, health service utilisation and the requirements for treatment and rehabilitation. This statement must be measured against the backdrop of a philosophy based on funding services in accordance with 'best practice' and 'evidence-based practice'. Implicit in this is the presumption that the 'core business' of the organisation can be clearly identified, described, measured and evaluated. How can mental health services compete for resources, justify current allocation and seek additional funding when it cannot accurately and comprehensively describe its market and core business?

Henderson (1997) argues that there is an imperative for the greater application of Morris' applications of epidemiology in psychiatry. These provide a type of template for gathering and describing information in a way that can be understood by decision-makers inside and outside the field of psychiatry. Through this process, and over time, it should become easier to identify factors within populations leading to mental illness, identify priorities for early intervention, institute 'best practice' and critically evaluate outputs and outcomes. Further, the gathering of data routinely should allow comparisons of these dimensions across a range of populations, societies and even cultures. Henderson also noted that epidemiology had an important part to play in estimating morbidity in populations, and not just people reaching professional

services, and cited the study by Krupinski and Stoller (1971) and the standardised prevalence estimate study (1979). He makes the argument strongly that, internationally, much more work needs to be carried out in psychiatric epidemiology. In Australia to date, the National Health and Medical Research Council Research Unit has focused mainly on two themes - the epidemiology of common psychiatric disorders and mental disorders in later life.

The National Mental Health Policy (1994) identified an epidemiological approach as being vitally important to the adequate provision of mental health services in Australia. Further to this, the Australian Health Ministers Advisory Committee recommended the development of a National Minimum Data Set and the carrying out of a National Mental Health Survey (1997) to provide national incidence, prevalence and utilisation data.

A number of other issues for attention were identified in the Chief Health Officer's report. The World Health Organisation uses an international classification of mental illness based on the International Classification of Diseases (ICD-10). This classification does not match the legal definitions of mental illness/disorder in the New South Wales Mental Health Act (1990). Furthermore, health professionals in New South Wales are trained on different nosologies, either ICD-10 or DSM-IV. This has been a major problem in the past as each had differing criteria for classification of mental illnesses. The

two systems are becoming closer aligned. It is now possible to cross code from one to the other, although more useful information can be currently obtained on a thorough multi-axial work-up using DSM-IV. None of these systems adequately describes impairment, disability and handicap associated with acute and chronic mental illness.

There is a need to standardise the use of the Australian National Diagnostic Related Groups Classification. This allows medical records administrators to code DRG's uniformly state by state, which will become increasingly important for both epidemiological and costing purposes. The Chief Health Officer's report also noted the absence of measures of quality of care. In general medicine it is easier to assess patient outcomes following surgery or medical treatment. In psychiatry the most important indicator of quality of care is the resulting improvement in a patient's health status. In practice, this requires assessment of health status on admission, again at discharge and ideally a month or so later in the community. These assessments are not carried out routinely using standardised instruments so it is impossible to measure improvement. Furthermore, there are no equivalent or near measures available in the New South Wales Inpatients' Statistical Collection. Andrews, Peters and Teeson (1995) attempted to address this through a national review of outcome measures in psychiatry and narrowed the available and reliable instruments down to a half dozen. This assessment process takes on critical epidemiological importance for **treated** populations for the following reasons:

- it would provide a reliable individual measure of symptom severity and diagnoses
- it would ensure a reliable rudimentary individual measure of psychiatric disability
- it would provide accurate information on housing, vocation and financial status
- it would allow data to be aggregated at a national, state and local level
- it would allow comparisons to be made across metropolitan and rural areas
- it would provide information on treated incidence and prevalence
- it would assist in determining high priority clinical areas
- it would assist in guiding the allocation of scarce resources
- it would assist the process of output and outcome evaluation

The need for a greater use of epidemiological methods was advocated in the Better Health Outcomes for Australians publication (1994). It suggested that this would be best achieved through the development of an Australia-wide network of mental health epidemiologists to work with the Australian Institute of Health and Welfare. Outcomes of this would include ascertainment of baseline prevalence rates, risk factors, recognition and treatment rates and clinical outcomes for mental disorders.

In conclusion, these aspects of the current literature will be reviewed to support the argument for the wider use of epidemiology in guiding clinical priority setting, resource allocation and outcome evaluation. Examples in the literature of contributions from epidemiology to detection, treatment and rehabilitation of mental illness will also be elaborated.

# **Chapter 3: Overview**

## **Current Approaches in New South Wales**

### **to Clinical Priority Setting,**

### **Resource Allocation and Outcome Evaluation**

The Caring for Health document (1995) produced by the New South Wales Health Department stated three principal goals for the health system. These were ensuring better health for people, enabling equity of access to comprehensive health services and improving the quality of service. The document also established the principle of moving financial resources to areas of greatest population and, in particular, placing greater emphasis on primary prevention strategies. In concert with the National Better Health Outcomes publication (1994), the state reinforced its intention to focus on the major causes of death and disability - coronary heart disease, cancer, injury, diabetes and mental health. In line with the philosophy of advocating 'evidence-based practice' greater emphasis was to be given to identifying best practice models and replicating them across the state's health services.

To support this approach, the Department of Health issued a paper on Health Economic Reform (1996). This paper was developed following detailed consideration by the Health Economic Reform Committee. The mechanism to facilitate equity was a Resource Distribution Formula and the introduction of casemix budgeting as a management tool. Financial incentives were to be

allocated to Health Areas to target key health outcomes and purchase services to meet the health needs of their population, irrespective of where they were provided.

There are five service components to the mental health RDF:

- statewide services
- chronic inpatient services
- acute inpatient services
- community mental health: child and adolescent
- community mental health services

The ultimate aim was to achieve a needs-weighted per capita funding approach. This needs-weighting is limited, narrow in its approach and falls far short of an epidemiologically based needs assessment as described by Stevens and Raftery (1994). In fact, the Needs Index for mental health incorporates three significant parameters of need - the proportion of the population never married, an index of relative disadvantage and a rurality factor. Lesser loadings were incorporated for boarding house/refuge populations, discounting for private services, Aboriginality and cross boundary flows.

The RDF does not in any way reflect a population health care needs assessment as described by Wing (1995) including components for incidence and prevalence

and measurements of efficacy and effectiveness. Budgets have been allocated on an historical basis to Health Areas which in turn allocate funds to inpatient and community services usually on the basis of the prior year's expenditure. Efforts have been made since 1984 to move resources from psychiatric hospitals to community services, although there has been criticism by a number of authorities, including Burdekin (1994), of the pace of this process and the procedure. This 'redistribution' has also been viewed as an argument for not increasing overall resources on the erroneous premise that if all the funds were moved out of the institutions into the community, there would be ample for all.

Given that the RDF is a per capita age weighted formula with a limited needs assessment, it does little to increase confidence that true areas of need in mental health will be identified and targeted for increased resourcing to ensure an improvement in the mental health status of the population. Too little attention has been given to benchmarking the types of programs and standards required to meet the best practice criteria in mental health and costing them. The Mental Health Classification and Service Costs (MH-CASC) Project (1998) is an exciting development which may be used to create a classification system based on case attributes. This will assist in informing the accurate use of psychiatric AN-DRG's for inpatient and community mental health services.



## Chapter 4: Overview

### Development of an Epidemiologically Derived Model of Needs Assessment to Guide Clinical Priority-Setting, Resource Allocation and Outcome Evaluation

A needs-based epidemiological approach for mental health would facilitate the following:

- estimation of Australian prevalence and incidence rates
- identification of clinical priority areas for targeted prevention and early intervention
- identification of specific priority populations within given rural and metropolitan communities
- research into the reasons for higher or lower rates of mental illness across health Areas
- development of best practice models to guide resource allocation and outcome evaluation for priority populations

- resourcing of these best practice treatment and rehabilitation programs on an Area-wide basis
- routine evaluation of these programs against standardised industry wide benchmarks and outcome measures

A needs oriented approach would provide a base level of per capita funding for mental health services. Additional resources would be allocated to areas where the treated prevalence and incidence rates were higher and where there was a clear lack of services to meet the need in accordance with best practice models.

The New South Wales Department of Health Public Health Bulletin (1992) observed that epidemiology was in an excellent position to assess the utility of new diagnostic procedures, compare their sensitivity, specificity, positive and negative predictive values and cost. It argued that population based epidemiological methods in tandem with the contributions of other health sciences could accurately gauge the mental health of the population. Furthermore, epidemiologists in concert with clinicians and health economists could describe those clinical approaches that offered best value for money in terms of outputs and outcomes. This of course was dependent upon the mental health service industry being able to define best practice for particular types of treatment programs in individual service settings. A component of this

entails the development of case classification systems to describe the features of the population/sub-population being treated.

Stevens and Raftery (1994) noted that an epidemiological model for needs assessment has seven components:

- statement of the context of the problem/disorder
- sub-categories
- prevalence and incidence
- services available
- effectiveness and cost-effectiveness of services
- models of care
- outcomes and targets

### **Statement of the Context of the Problem**

This includes all patients diagnosed under ICD-10 classifications or ANDRG's in psychiatry. These patients must be identified with respect to their treatment settings. It must also be recognised that many patient groups lack a well defined setting, as in the case of mental illness, and may be cross-sectoral. Treatment of mental illness may also occur in a continuum where more or less specialised support is available. It is vital therefore to be able to cost

assessment and treatment elements at each stage and to make dynamic adjustments to allow for clinical need.

### **Sub Categories for Description and Costing**

The disease types, symptom severity and associated impairment, disability and handicap needs to be able to be clearly described as this allows the treatment and rehabilitation program to be properly defined and costed. It also allows the establishment at a local, state and national level of a mental health data set on the health of the population. A cost range for treatment may also be established for particular DRG's. Treatment of acute schizophrenia in an acute unit may, for example, range from several hundred dollars a day to a thousand dollars a day depending upon the intensity of treatment required. Length of treatment will also vary considerably. Measurement of this type of variation already occurs in physical medicine such as in the treatment of diabetes, complicated or uncomplicated cardiac failure. DRG's already detect the subtle treatment cost variations. After the patient with acute schizophrenia leaves hospital or has received treatment from a community crisis team and proceeds to the next level of care, this in turn needs to be quantified. Outcomes of treatment in specific clinical settings need careful evaluation to measure changes in health status.

## Prevalence and Incidence Rates for Mental Illness

Stevens and Raftery (1994) noted that neither incidence or prevalence are synonymous with need. Furthermore, in the field of mental illness there is evidence that many seriously mentally ill people never reach treatment and rehabilitation services, at least in a consistent fashion. Solomon, Buckingham and Epstein (1993) estimated that there was an approximate prevalence of 510,000 people with a serious mental illness in Australia. Yet only 45-54 percent had been treated by public or private providers in the year identified. This suggested that a large number of people were not receiving treatment or, if they were, the system of collecting data was not recording these episodes of care. Again, Stevens and Raftery emphasised the need to break down treated incidence and prevalence data by sub-category and level of severity in order to facilitate service planning and provision. Prevalence and incidence data also needs to be supported by information on such variables as age, sex, ethnic and socioeconomic status, region, availability of diagnostic and treatment services, etc. Predictable relationships exist between epidemiological data and some of these variables. An example is the higher rate of suicide amongst males aged 14-21 in rural areas of Australia. This has been hypothesised as due to higher levels of depression associated with the rural recession, high levels of unemployment and the ready availability of guns. Epidemiological research can play an important role in identifying causative factors, an associations by studying large numbers of individual 'cases'.

## Using Clinicians to Generate Data/Information

This is important from a number of points of view. Service providers are case finders and, if this information is collated, it can provide a useful insight into treated incidence and treated prevalence of various mental illnesses, particularly when added to information available from Medicare claims by medical practitioners. Unfortunately, there is a lack of uniformity of mental health information systems in New South Wales and Australia. Not only is there a shortage of mental health workers in some areas, but for those employed there is no universally used information system that captures socio-demographic data and clinical information. It could be anticipated that inpatient services attached to general hospitals or psychiatric hospitals would be supported through such a system. Unfortunately, this is not the case and the only aggregated data comes from the Inpatients' Statistical Collection which records crude measures such as admissions, separations and major diagnoses.

It is vital therefore that there is standardisation in the type of mental health information systems provided to allow cost comparison and outcomes evaluation. As Stevens and Raftery (1994) pointed out, it is vital to have approximate service costs and service levels in order to inform outcomes evaluation and priority setting. These are the fundamentals of an epidemiologically driven needs-based assessment system.

## Effectiveness and Cost-effectiveness of Services

Knowledge of efficacy offers great scope for restructuring of services and improving the health of a population. This has become particularly important in areas of physical medicine where increasingly epidemiology has questioned the benefit of many high-cost 'poor return' technologies. In mental health the effectiveness of intervention strategies (other than ECT and medication) has rarely been measured. For this reason there is a pressing need to be able to correlate the clinical effectiveness of therapeutic programs and cost effectiveness, based on agreed outcome measures which can be easily measured and evaluated.

It is unwise to argue cost-effectiveness by treatment setting alone at this point in time. It is far more sensible to focus on health outcomes or changes in health status that can be achieved in different settings utilising specific treatment modalities. It is important, again, therefore to identify the particular sub-categories of mental illness requiring various types of treatment and rehabilitation, and cost these in terms of the length required to achieve specific health outcomes (improvement in mental health status).

Legitimate health outcomes may include arresting the development of disability thereby reducing the extent of dependence on the mental health system in the longer-term and allowing fuller participation in the community. Assertive

community-based models of care in rural and urban environments need to be costed with respect to the outcomes provided.

The use of ANDRG's to describe casemix and average cost per treatment/rehabilitation setting is of limited value unless a clear measure of health outcome can be achieved. This is best typified by comparing average length of stay in acute psychiatric units. The shortest length of stay may not necessarily equate to a better treatment program and health outcome, particularly if the readmission rate is higher than comparative services with a similar casemix.

A high level of detail is required in model service development to allow benchmarking, accurate analysis and evaluation. This is, however, possible with a degree of standardisation.

### **Models of Care - An Epidemiological Focus**

Models in this context refer to systems or patterns of care/service delivery for people with mental illnesses. It involves the delineation of specific clinical treatments within defined treatment settings. This area has not, until recently, been particularly well defined in psychiatry. Whilst the mental health professions have recognised the existence of sub-specialty groups, eg, child



and adolescent, psychogeriatrics, rehabilitation, forensic, etc., too little attention has been given to benchmarking their outcomes and outputs.

Epidemiologically-based needs assessment requires clear identification of the consumer groups and their case attributes, a description of the range of treatment settings and their roles within a comprehensive mental health service.

This, in practice, depicts a matrix with hierarchies of treatment models into which consumers may be streamed according to the availability of services and clinical need at a given time.

All models should aim to provide individualised treatment and rehabilitation to reduce the risk of chronicity, impairment, disability and handicap.

## DISCUSSION, RESULTS AND RECOMMENDATIONS

At the completion of this critical review it will be possible to determine how well placed mental health services are in New South Wales to participate in and take advantage of some of the major change processes under way in the area of health service reform. Particular emphasis will be placed on the new dictum of 'capacity building' which is being pursued with considerable enthusiasm. It will be demonstrated that without clear guidelines for planning, needs identification, resource allocation and outcomes evaluation at both a state and area health service level that mental health services will be disadvantaged. Critical analysis will demonstrate that mental health services have not developed within an unambiguous public framework and the contributions of epidemiology as described by Morris (1964) could be incorporated to far greater advantage. A number of results will be detailed and subsequent recommendations to guide and strengthen planning and development processes within mental health services at the area health service level. This will include a more strategic approach to the development and implementation of key information systems that allow accurate and sustainable reporting on how well the needs of populations in care are being met. The critical review will not make a definitive recommendation on what information should be collected and analysed. Rather the objective is to raise the awareness of key individuals of the need to collect information routinely concerning the operation of their service. This should then be used to reform existing services and inform the

allocation of resources to ensure the best possible outcomes for those most in need. The introduction of a more clearly-defined model incorporating epidemiological principles can only enhance the profile of mental health services thereby improving its position to compete for scarce resource.