

**Risk Management:
Towards safe sound and supportive service**

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1. INTRODUCTION

1.1 General Background

There have been major changes over the past 40 years in the patterns and delivery of treatment and care for people with mental disorders. These have been brought about by a number of factors including:-

- developments in new drug treatments
- the advent of and developments in community care
- a growing understanding and evidence base in psychological and other therapeutic approaches
- recognition of the essential role of social support in effective mental health treatment and care
- reduction in the number of psychiatric beds available
- a growing concern about the safe provision of mental health services in community as highlighted in a number of public inquiries into the treatment and care of people with mental disorder

Mental health problems affect roughly one in three young people and adults in the U.K. For every person with mental health problems there are up to six other people (family, partners, friends) who are directly affected by the distress. Living with mental health problems can be a life shattering existence with profound effects on emotional, social and intellectual function.

There are differences of nature and degree which make risk taking in mental health particularly difficult.

People who pose a risk to themselves or others often have a wide range of problems including mental illness, substance misuse, legal or financial problems, housing difficulties,

consequently they will require a spectrum of services. The range of services that people who pose risk may need, means that effective working between the different agencies responsible for the various aspects of care is essential.

Risk assessment and management does not fall exclusively within the domain of any single profession or discipline. No agency can operate in isolation when working with risk. The effective management of the dangerous individual cannot just be the responsibility of mental health, social services, or probation or housing. As a public protection issue, it has to be the concern of all agencies, at all levels, and driven as such. Working together for public and community safety is widely recognised as an ideal to which all health, social care, criminal justice agencies and voluntary agencies should aspire. The potentially disastrous consequences of failure to do so are well known and documented. Failures in interagency communication and joint working continued to be cited in reports of inquiry into homicides and suicides in the community, Richie, Dick & Lingham 1994, Michon et al 1997. (ref. from 1999).

Major areas of legislation and policy on interagency collaboration now underpin services for people who pose a risk to themselves or others (Mental Health Act 1995, Crime and Disorder Act 1998, Building Bridges, DOH 1995, The Spectrum of Care 1996). Public safety has become a major outcome for Mental Health Services.

The need for a comprehensive risk management strategy for mental health has never been greater.

The challenge is to provide evidence based safe, sound and supportive risk management for NHS service users, staff, and the wider community.

Our approach to the development of comprehensive evidence based risk management is founded on the principle that people with mental disorder (whatever the nature) should be

treated in the same way as people with any other illnesses or medical conditions. Care and treatment needs should be properly assessed and wherever possible provided with full agreement and input of the patient and his / her significant others (family or carers).

RAMAS (Risk Assessment, Management and Audit Systems) was developed by O'Rourke & Hammond (1996) in an effort to incorporate "lessons learned" from public inquiries with "what works" principles in public safety and risk management.

RAMAS was developed in 1995/96 to:-

- Ensure that people who pose a risk to themselves or to others do not "fall through the net" of treatment and care
- To provide a common language for inter-agency collaboration and communication on risk management, public safety and individual care
- Facilitate a flexible, user friendly integrated, co-ordinated and positive approach to risk by involving service users, their carers and families
- Facilitate case and workload management through a standardised method which provides evidence based care and good clinical practice

RAMAS is suitable for use with everyone who comes into contact with mental health, criminal justice, social service and other agencies.

RAMAS measures four areas of risk:-

1. **Dangerousness:** At risk of causing harm or danger or encouraging / involving others in the causing of harm or injury to others.
2. **Mental Instability:** At risk of self or others because of fluctuating and / or unpredictable mental health function especially in relation to command hallucinations and other 'at risk' psychotic or disturbed phenomena.

3. **Self harm / suicide risk:** At risk from self, intentional injury or killing oneself, action / behaviours destructive to one's own safety or health.
4. **Vulnerability:** At risk of or exposed to damage or harm by others (e.g. family, society or in care).

This research focuses on the scientific evaluation of the Risk Assessment Checklist (RAC) and the training and support of NHS and other staff and services on the systems. The next section provides an introduction to the scientific background of the systems.

1.2 Scientific Background

The literature on psychiatric risk assessment reveals a host of difficulties which have militated against the practical application of much of the interesting research. There appear to be 4 main difficulties. First, the constructs of dangerousness and risk are not well defined. Second, the outcomes by which risk assessments may be validated are often unclear and unreliable. Third, there is still insufficient understanding of the interaction between risk indicators. Finally, the essentially normative focus of much risk assessment research does not always map onto the essentially idiographic task of assessing an individual patient.

There have been a number of reviews of the history, philosophy and legal implications of dangerousness (McGinley 1995) which serve merely to highlight the diversity of the concept. The Butler Committee (1975) defined dangerousness as *"a propensity to cause serious physical harm or lasting psychological harm"* while Scott (1977) defined it as *"an unpredictable and untreatable tendency to inflict or risk serious, irreversible injury or destruction, or to induce others to do so"*. These definitions are widely used but they are not universally accepted (Faulk 1988).

The bulk of the literature on risk assessment either, explicitly or implicitly, rejects the use of Scott's term *unpredictable*. Resource and effort are expended in order to clarify those characteristics that may be utilised in the prediction of dangerous behaviour (Klassen and O'Connor 1988; Clark, Fischer and McDougall 1993; Monahan and Steadman 1994; Harris, Rice and Quinsey 1993). McGinley (1995) argues that '*..if dangerousness is by definition unpredictable, in the fullest sense of the term, referring to the irreversible injury of the index offence and the possibility of its re-occurrence, then only the option of total and limitless secure provision would be available to guarantee the protection of the public.*'

What emerges from this literature is that measures of risk are based upon the judgement of observers that problematic behaviour may reoccur in the future. Furthermore these judgements are based largely upon what the subject has done, or threatened to do (Copas, Ditchburn and Marshall 1994; Clark et al 1993; Monahan and Steadman 1994). This implies that dangerousness is a latent characteristic of the person in question.

The research focus is mainly centred upon dangerousness or the risk of violence or harm to others. This emphasis is understandable given growing public concern towards acts of violence perpetuated by psychiatric patients in the community (Richie, Dick and Lingham 1992; Reed 1992; O'Rourke, Hammond and Davies 1997). However, it serves to hide other important areas of risk that pertain to the psychiatric services. Thus the risk of self-harm and suicide also takes a central place in risk assessment (Strosahl, Chiles and Linehan 1992; Banger 1994). Equally, the risk of mental deterioration and impending breakdown is a vital aspect of monitoring care in the community (DOH 1993; O'Rourke 1995).

A further problem facing those wishing to integrate the literature of risk assessment into their own practice is the discrepancy between the practitioner with an inherently idiographic problem and the researcher who typically approaches the problem from a normative

perspective. Research in psychiatric risk assessment has been widely concerned with building statistical models for the prediction of a dangerous or problematic behaviour (Hassin 1986; Christiansen 1986; Monahan and Steadman 1994; Copas, Ditchfield and Marshall 1994; Harris and Rice 1997) and these require analysis of substantial samples from which generalisations are to be drawn.

An assumption upon which these analyses are based is that the outcome, or dependent, variable, is reliably identified and measured. Unfortunately this assumption is often difficult to justify. Putting aside problems in defining the outcome variable there are issues concerning the independence of the predictor variables with each other and also with the therapeutic context. Thus, for example, if a patient begins to show the precursors to self harming behaviour, health care practitioners will act to minimise this occurrence. In this way research within a clinical context is never likely to provide the background for the random effects that prediction/classification models often require.

Since Paul Meehl's seminal monograph in 1954 in the area of clinical decision making, there has been a clear divide between the procedures of clinically informed judgement and statistical prediction. It is generally found that statistical prediction is more accurate than pure clinical judgement and this has led to suggestions that risk assessment must be actuarially based and built around a transparent statistical model (Monahan 1981; Miller and Morris 1988; Klassen and O'Conner 1988; Monahan and Steadman 1994). The typical statistical approach is to build a linear or logistic regression model. However, a number of clinicians are uneasy about this trend since it relies very heavily on normative information and ignores valuable idiographic insights (Pollack 1990; Hammond 1995b). Thus, findings drawn from large scale statistical models, while of some general use, may not be directly applicable in a specific individual assessment. For example, Mullen (1984) has argued that dangerousness is a quality of an individual's actions rather than of the individual himself. The question to be

posed in clinical practice is not "*is this person dangerous?*" but rather "*might this person in certain circumstances behave in a dangerous way?*" (Mullen 1984). Given that these circumstances are likely to be specific to the patient in question, it is important to recognise the value of the idiographic context in making an assessment of risk for a specific patient.

The dominance of the prediction/classification approach to risk assessment has led to a dearth of research exploring actuarial alternatives. It is perhaps not surprising, therefore, that there has been very little work on psychometric risk modelling. Under this approach the problem of risk assessment shifts from the *prediction or classification* of harmful behaviour to the *measurement* of underlying latencies. A psychometric latency is best viewed as a potential. Thus, a latent trait of dangerousness is a measurable construct indicating the potential for dangerous behaviour. The measurement is not direct but involves the modelling of a number of indicators to provide a reliable estimate of the trait.

Many existing risk assessment devices are simply lists of risk indicators or items, chosen for their perceived importance but not related to each other through any theoretically defensible structure. Risk scores are then commonly generated by a weighted or unweighted summation of the indicators (Nuffield 1989; Harris, Rice and Quinsey 1993; Copas, Ditchfield and Marshall 1994). Two serious limitations of this approach exist. First, this approach implies that the indicators conform to an additive measurement model and yet this assumption is rarely tested. Second, the underlying latent structure, defined by the relationships between the indicators, is rarely made explicit so the construct validity of the resulting scores is usually suspect.

The RAMAS seeks to improve upon and complement existing practices by being an objective and comprehensive approach which will ultimately allow actuarial audit of professional judgement of risk to be possible. It attempts to provide a profile of client's risk factors

together with demographics, specific risk indicators and needs assessment. It also summarises vital information to enable practitioners to plan targets for intervention and change and to monitor and manage risk effectively.

As such the RAMAS does not depend totally on its risk indicator checklist in order to make an assessment of risk, however, the scores derived from the checklist are designed to inform the clinical judgement of the assessor. The scale score indicates how far along the risk continuum the patient is and the assessor must then make a clinical judgement of the best action for managing that patient. The greater the objectivity and reliability of the scale structure the more powerful the information. If a cumulative model can be fitted to the scales then the user has the added benefit of truly additive scales as well as the possibility of identifying ill-fitting individuals who may manifest idiosyncratic and unpredictable profiles.

The discussion above briefly describes the scientific background that informed the thinking underlying the development of RAMAS approach. In the next section we turn to the more practical issues in carrying out the research.

2. The Research Agenda

2.1 Aims of the Project

This South Thames R & D Project was set up with the following aims in mind:-

1. to refine and improve the underlying psychometric model of risk assessment
2. to enhance the effectiveness of clinical risk management (by providing a standardised, consistent approach to risk management across services and agencies)
3. to achieve a proper focus on the needs of service users, their families and carers
4. to demonstrate that we have learned the lessons of public inquiries by providing evidence based risk management, public safety and individual care.
5. to provide staff training for this important work
6. to contribute to the development of national standards for risk management across services and agencies.

2.2 Definitions

Risk Assessment: risk Assessment can be defined as the systematic collection of information to determine the degree to which harm (to self or others) is likely at some future point in time.

Risk Prediction: The assigning of a probability to a patient, indexing the likelihood of that patient to commit harm to self or others e.g. a violent offence (criminal or otherwise), within and without the hospital (not if and when discharged).

Risk Management: the implementation of a set of values and principles integrated with a set of operational procedures and supports surrounding a patient or client that enable a dynamic sensitivity to the individual's needs, vulnerabilities and evolving behaviours. The purpose of

these procedures being risk minimisation and the provision of safe, sound, supportive services.

Safe, sound and supportive service: are defined by the DOH (1999) as follows:-

- Safe:** to protect the public and provide effective care for those with mental illness when they need it
- Sound:** to ensure that patients and service users have access to the full range of services that they need
- Supportive:** working with patients and service users, their families and carers to build healthier communities

2.3 Timescales

This was a two year funded project which was undertaken between March 1998 and March 2000.

2.4 Values and Principles

The Values and Principles of this Project are:-

An Evidence Based Scientific Approach

The risk factors studied in this research were culled from available national and international research findings (see literature review), our own clinical experience, existing research by ourselves and lessons learned from public inquiries before and during the period of study. The Research Consultant is a Senior Clinical Scientist working in NHS and academic settings.

[A Partnership Approach](#)

The risk factors, and the risk and needs assessment areas and the RAMAS methods were designed only after considerable consultation with service users, their families, multi-disciplinary teams in NHS services and teams in key network agencies outside the NHS, namely Police, Probation, Social Services, Housing, Voluntary Agencies). In this partnership approach service users are recognised as core contributors to effective public safety and good clinical care. The RAMAS approach emphasises client and carer involvement not as an optional add on but a clear and central priority.

[A Common Language, Common Goals, Shared Agendas](#)

The project spent considerable time on devising a common language to describe risk and risk behaviours. All risk factors, and risk assessments are operationally defined in common language, not medical, not psychological . . . everyday jargon free common language. Defining behaviour(s) not diagnostic categories, in order to facilitate integration across agencies and settings.

[A Whole Systems Approach](#)

This project set an ambitious agenda to provide a comprehensive pro-active, interagency approach to risk. To this end there has been an explicit commitment to a whole-systems approach to individuals, their needs, their carers needs and the needs of families and the services that support them.

We have understood that the full and timely sharing of information is essential if each agency is to discharge its responsibilities and make sound decisions where health, liberty and safety of the public and individual patients or clients are at stake. *Home Office Circular 12/95, Crime and Disorder Act, Section 115, 1998.*

We aimed to demonstrate that we have learned the lessons of recent public inquiries by showing that safe services are the product of agencies working closely with clients and with each other defining shared goals of public safety and safe, supportive individual care.

[A commitment to Audit and Review](#)

As public servants we have understood the importance of external scrutiny.

The project has submitted RAMAS to a number of external audits. Its work has been disseminated widely through journal articles, conference papers and reports (see page)

This Report represents an essential aspect of that commitment also. It will be disseminated to network and key agencies for further scrutiny and review.

[Applicable Research](#)

To maximise the project funding it was agreed from the outset, that the project should be consistent and integrated with other NHS activities, across the spectrum from primary care to specialist services, both locally and nationally.

The strategy was clear, once the scientific integrity (validation) of the tool was complete then the goal was to influence practice by developing staff training and support using clear protocols and guidance. To this end we began in 1998 by rolling out a training programme for all staff both within the NHS and with its partner organisations.

[A Quality Agenda](#)

The project aimed to provide state-of-the-art up to date, relevant and practical solutions for public safety and individual care. National Policy on Public Safety was the main framework for our work. The NHS Clinical Governance and the NSF were also included in the quality

frameworks. Criminal Justice Agency quality frameworks were elicited through Home Office publication(s) on evidenced based care and other Department of Health / Home Office publications and the 60 public inquiry reports were examined to provide guidance and recommendations for effective practice.

The next section reports on the research with emphasis on Aim One of the Project.

3. The Research

3.1 Introduction to The Psychometric Modeling of Risk

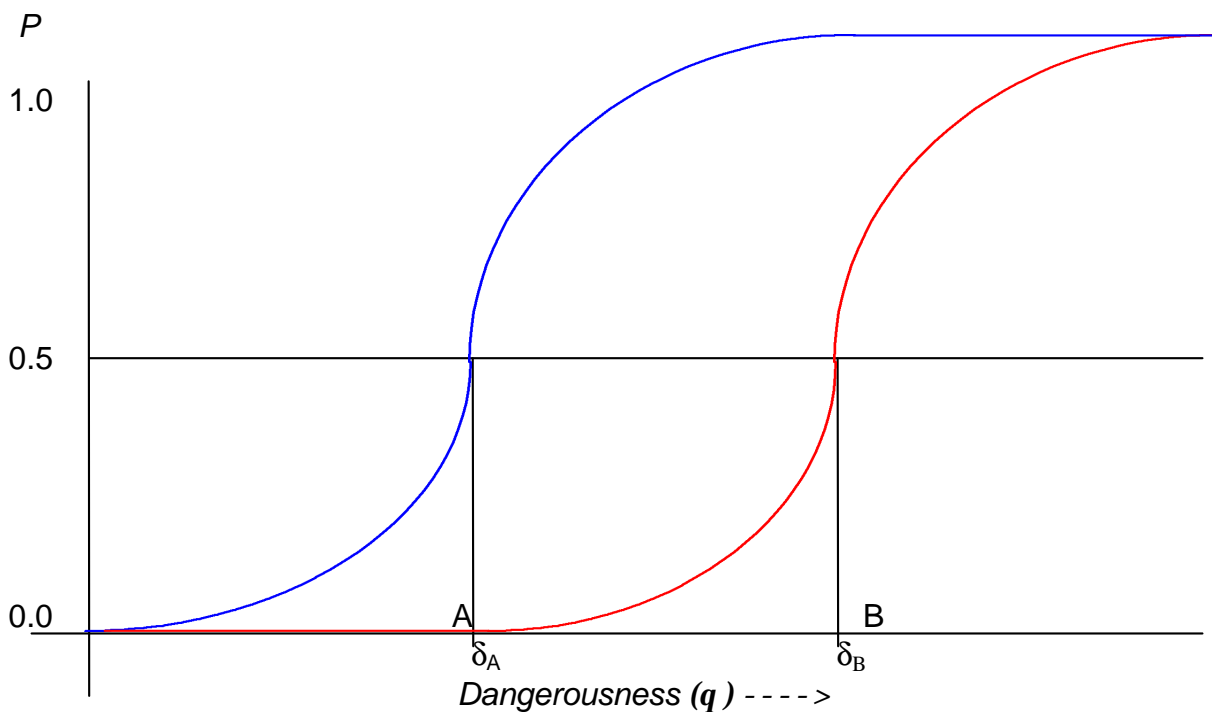
One of the founding fathers of modern psychometrics, Louis Guttman (1941) stated that, in the absence of reliable criteria for validation, one has to look at the relationships between the items themselves. This is a widely supported position (Niemuller and van Schuur, 1983; De Jong and Molenaar 1987) and is the basic premise of all latent trait models of measurement. Fitting empirical data to an a-priori model of systematic relationships between risk indicators (items) allows the construct validation of a risk assessment device. In addition, such a model can be used empirically to evaluate any theoretically justified ordering of items.

Psychometric modeling of risk has a number of distinct advantages over the traditional statistical models of prediction and classification. First, it imposes a clear and transparent measurement model on the assessment procedure which may utilise a mixture of clinical judgement and actuarial data. Secondly, the relationships between the risk factors or predictors is explicitly modelled. This provides the means for examining the structure and meaning of the risk behaviour under examination. Third, using appropriate item response theory models it is possible to generate a statistical estimate of the underlying latent trait of dangerousness which is sample independent. Based on this principle the assessor is able to examine the degree to which an individual patient fits the model, thus, unpredictable, ill-fitting, profiles can be readily identified. Finally, the reliability and validity of the risk assessment may be easily estimated using standard psychometric procedures.

The RAMAS proposes a cumulative model of risk for psychiatric risk assessment (Hammond 1995). This is the simplest and strictest psychometric model and comes in a variety of forms, all of which have the advantage of simplicity and ease of interpretation as well as enabling

clear additive measurement. A probabilistic, or stochastic, cumulative model is expressed in figure 1 where two risk factors are plotted in terms of their probability of occurrence (p) against the underlying latent risk (θ), in this case dangerousness. It should be seen that p , the probability that a given patient presents with a specific risk indicator, is a function of the incidence of the indicator (δ) and the degree of dangerousness (θ). These probability functions are known as the trace lines or item characteristic curves (ICCs).

Figure 1
The Trace Lines of 2 Risk Factors Demonstrating Double Monotonicity



The major constraint imposed by the model is double monotony. This assumes that the risk indicators are ordered according to their incidence so that the probability of a low incidence risk indicator occurring is *always* lower than the probability of a high incidence indicator. Thus, the function for every item is assumed to have equivalent slope and we may assume that the trace lines for each risk indicator are essentially parallel to each other.

This is known as a one-parameter model because the only parameter that differentiates the items is the position along the θ axis. It is due mainly to Rasch (1966) and is sometimes

termed the Rasch model. It reflects a probabilistic extension of an earlier deterministic model proposed by Guttman (1950) often termed the scalogram model. Procedures for fitting this model have been developed Rasch (1960), Fischer (1976) and Kelderman (1984). These provide the opportunity for generating powerful fundamental and additive measurements, however, they make quite specific assumptions about the distribution of the latent trait in question which cannot be taken for granted in psychiatric risk, the distribution of which has been under-explored. A more realistic model, given the exploratory nature of this study, is the cumulative stochastic model proposed by Robert Mokken (1971). This model is non-parametric in that it does not assume an underlying normal distribution for the latent risk.

Mokken's (1971) model may be fitted by applying the concept of psychometric homogeneity.

The overall fit of the model is evaluated by the following formula:

$$H = \frac{\sum_{i=1}^{n-1} \sum_{j=i+1}^n (p_{ij} - p_i p_j)}{\sum_{i=1}^{n-1} \sum_{j=i+1}^n p_i (1 - p_j)}$$

Where

p_i = The proportion of times item i occurs,

p_{ij} = The proportion of times item i occurs and item j does not.

H = An index of overall homogeneity or 'fit' of the model

An index of homogeneity for each item may be readily derived from this additive formula and statistical criteria of fit may also be derived (Mokken 1971; Sijtsma and Molenaar 1987). The four RAMAS scales, Dangerousness, Mental Instability Self-Harm / Suicide and Vulnerability have been successfully fitted to the Mokken model (Hammond 1995), indicating a cumulative underlying structure to the features that predict problems.

However, the Mokken model does have its limitations, not least in the fact that it cannot provide an index of fit for each client. For this property it is necessary to turn to the Rasch model. There are good grounds for wishing to identify client fit in risk assessment because it essentially addresses the problem of the client who may appear to have a low general risk

level but who presents with an idiosyncratic or unpredictable profile. In fitting the risk features to a cumulative model we are confirming that there is a generally predictable pattern to most client's risk profile. Thus the extent of risk may be gauged by reference to a relatively well ordered accumulation of risk factors. However, there are always exceptions and it would be easy to become complacent with such a model so that a person presenting with a very unusual profile would slip past the assessor unnoticed. In other words a client may present with very few risk features present but the features that are present indicate a high risk. The score may say low risk but the profile may indicate high risk. In fact, it is these unusual profiles that may be particularly worrying because, by definition, they belong to clients who are unusual and unpredictable.

The Rasch model allows the user to estimate client fit as well as providing a more sophisticated statistical basis to the scoring of the scales. Initially, the Mokken model was applied because it is a non-parametric model and should suffer less bias with small samples. Now that the sample size is larger it would seem appropriate to try to fit the more statistically stringent Rasch model.

In carrying out a risk assessment it is common that the information on certain clients may be incomplete or equivocal. A further advantage of the Rasch model is that, if it can be found to fit the data, it becomes possible to estimate scale scores on incomplete profiles. This is because the information required to place the client upon the risk scale is carried in all the items meaning that it may be possible to accurately place a client using fewer risk features than are contained in the full scale. This is the principle that underlies modern tailored testing techniques (Weiss 1989).

3.2 Scientific Development

The purpose of this study is to fit the risk indicators derived from the RAMAS to a cumulative model. The cumulative model anticipates that certain behavioural and historical indicators will serve as the basic platform upon which risk analysis may be built. Degree of risk may then be viewed as an ordered accumulation of risk factors.

Our first remit was to evaluate the new scale which has been added to the RAMAS in 1997. This was labeled Vulnerability and seeks to gauge the degree of vulnerability the client manifests in his/her relationships with others. The second remit of the studies was to carry out a Rasch analysis of each scale in order to explore the potential for developing a computer administered system that may be tailored to each client individually.

The original model applied was the Stochastic Cumulative Scaling Model of Mokken (1971) which is a non-parametric model. However, the Rasch model offers a statistically more rigorous treatment of the data and provides the potential for identifying individual indices of fit as well as degree of risk.

3.3 Method

Risk Indicators

The original RAMAS contained a 66-indicator checklist of clinical risk factors which were derived from the clinical and research literature and are described in detail in O'Rourke (1995). The latest version of the RAMAS now contains 83-indicators.

The RAMAS, Risk Assessment Checklist factors (both stable and dynamic) were subsumed in four 'domains': Dangerousness, Mental Instability, self harm / suicide risk and Vulnerability.

Multiple measures are used in addition to estimate risk. RAMAS Measures are considered under four parameters namely: (1) historical and developmental factors (2) clinical and symptom factors (3) dispositional and personal factors and (4) contextual and situational factors. Additional measures include the patient's self report, the report of significant others (usually a family member or partner), crime records, chronologies, hospital records, other service records and clinical and practitioner evaluation.

The next sections summarise the psychometric development of the Risk Assessment Checklist (RAC). This is the work of our first aim and is essential to provide the scientific and objective basis of the RAMAS approach.

3.4 Data Collection

The original data was collected from sixty-six RAMAS trained mental health practitioners working in a variety of mental health teams who completed the RAMAS on patients on their caseload. A total of 258 risk profiles were collected. Since that time a further 213 profiles have been collected giving a current sample of 471.

An additional 72 patients were identified for whom RAMAS forms were completed by more than one practitioner.

The practitioners were also asked to use their clinical judgement to indicate on a crude 3-point scale the degree of risk that they felt the patient in question presented. This scale was based on the categories Low, Medium or High risk. Clearly, this is a very subjective judgement but, made within the context of a consideration of patient data necessary for completing the RAMAS, it is perfectly in keeping with the rather subjective procedures practised widely in forensic psychiatry.

3.5 Results

The sample for these analysis consists of 471 clients receiving care within the community the sources include community mental health, community forensic services, the probation service, close supervision unit, Regional Secure Unit and one Special Hospital. The median age of the sample was 35 with the youngest patient at 16 years of age and the oldest at 88.

Of those patients assessed in community settings, over half (66.42%) were married and 40.87% live with their partner. It was found that 29.24% lived alone. This has some implication for risk assessment since the likelihood of support is lower for this group and early warning signs have a greater probability of being missed. A greater dependence on bed and breakfast and hostel accommodation than would be expected in the general population was found (14.38%). This highlights the likelihood of lower domestic stability among the patient population with its attendant role in the risk of self-harm and neglect.

The mental health problems presented by the community sample are reported in table 1. The highest incidence of problems was observed for diagnoses of Depression, Personality Disorder and Psychosis. The lowest incidence was for Abuse/Trauma and Eating Disorder.

Table 1
Presenting Problems of the Sample

<u>Presenting Problem</u>	<u>%</u>
Depression	31.4
Anxiety/ Stress/ OCD	12.7
Anorexia/ Eating Problems	2.5
Abuse/ Trauma	2.0
Mental Impairment/ Dementia	7.8
Personality Disorder	29.4
Substance Misuse	11.3
Psychosis/ Schizophrenia/ Hypomania	27.9

Note that some patients will have more than one problem.

Clinical Judgements

Over 25% of the patients (26.7) were regarded as a low risk and approximately the same (27.1) were felt to present a medium risk. A lower percentage (12.4) were felt to present a high risk. One important finding on this question however was the high number of respondents who did not answer this question (33.7%). This may be viewed as a disturbing lack of compliance but feedback from the training sessions provided a more considered explanation. Many of the respondents did not feel competent to make a judgement of risk without input from other colleagues and they were justifiably concerned that their imprecise view was registered on a patients form. This highlights the need for risk assessment to be carried out in the context of a team. Indeed, this is the context for which RAMAS was originally developed.

Incidence of Risk Factors

The perceived incidence of each factor for the community sample is presented in table 2. The most frequently occurring indicators are the existence of some form of psychiatric medication (65.5%), a history of mental illness (65.13%) and current mental illness (63.57%). Given the source of the sample and the high incidence of psychotic and depressive presenting problems this is not a surprising finding. The least frequent risk factors concerned arson and hostage taking.

What is notable about these risk factors is the range of their frequency ranging from 1.55% (Recent fire setting) through to 65.5% (psychiatric medication). Risk factors of note are Threats to Injure (30.23%), Threats to Kill (18.60%) and Predatory Behaviour (13.95) as well as Suicidal Ideation (36.43%) and Risk to Self (41.47%).

Table 2
Percentage Incidence of RAMAS Indicators

Indicator	%	Indicator	%
11. On psychiatric medication	65.50	43. Considers staff helpful	24.42
1. History of mental illness	65.12	64. Unstable environment	24.42
2. Current mental illness	63.57	31. Drug problems	24.03
19. Anger/emotional problems	63.57	54. Multiple problems	24.03
55. Interpersonal conflicts	58.14	24. Considered risk to family & friends	23.26
20. Low self esteem	51.94	25. Considered risk to staff	21.71
18. Unpredictability	51.16	65. Denial of problems/risk	21.71
13. Recent hospital admission	49.61	14. History of childhood abuse	21.32
56. Social Isolation	49.61	23. Considered risk to patients	20.16
9. History of aggression /violence	46.13	52. Threats to kill	18.60
5. Unstable mental condition	43.02	61. Legal problems/cases pending	18.60
29. Impulsive	42.64	4. Atypical excitement or passivity	18.22
22. Considered risk to self	41.47	47. History of absconding	18.22
6. Paranoia	40.70	57. Recent bereavement	18.22
21. Unreliable	39.53	66. Refuses treatment	17.83
16. History of overdose or suicide attempt	39.15	44. Considers staff as a threat	16.28
15. History of self neglect	38.37	28. Disinhibited	15.89
3. Psychotic symptoms	37.21	39. Low IQ	15.50
10. Communication/Expression Problems	36.82	63. Predatory behaviours	13.95
17. Suicidal ideation	36.43	48. Recent absconding	13.18
8. Personality Disorder	35.66	58. Carries weapons	9.30
42. Unrealistic expectations	33.33	62. Criminal lifestyle preference	9.30
30. Alcohol problems	32.95	59. Use of force or weapons	8.91
53. Facing high levels of stress	32.17	34. Metabolic or endocrine disorder	7.75
7. Treatment unstable/failure	31.78	35. Organic illness/dementia	6.59
51. Threats to injure	30.23	33. Epilepsy or similar disorder	6.02
12. Non-compliance with medication	28.29	36. Head injury	5.81
40. Problems with negotiation/compliance	27.52	37. Hearing sight problems	5.81
60. History of criminal convictions	25.97	49. History of hostage taking	5.04
26. Considered risk to strangers	25.58	38. Learning disability/chromosomal disorder	4.26
32. Aggressive when intoxicated	25.58	45. History of arson	3.88
27. Noncompliant/Uncooperative	24.81	50. Recent hostage taking	2.33
41. Oversensitive to advice/suggestions	24.42	46. Recent fire setting	1.55

Fitting the Cumulative Model (Original Study)

The results of the Mokken scale analysis were extremely satisfying. Three scales were clearly identified by an iterative process of scale refinement (Mokken and Lewis 1986). The first scale contained items relating to the harm of others and this is labelled the *Dangerousness* scale. The second scale contained items relating to mental illness stability is labelled the *Mental Instability* scale. The final scale contained items relating to the harm of self is labelled the *Self Harm* scale.

The parameters derived from the analysis of these scales shown in tables 3, 4 and 5 respectively in which the risk factors are listed in frequency order to identify the cumulative structure. The homogeneity index is a coefficient indicating the degree to which each risk factor fits the specified model. Mokken argues that this coefficient should exceed 0.30 for a reasonable fit. In fact, the delta value gives a statistical test of fit. Delta is approximately normal with a mean of zero and a standard deviation of 1. This means that if delta is greater than 1.96 we have a statistical significance of $p < 0.05$.

The Dangerousness Scale

Clearly, the items in the dangerousness scale all fit the model well and we can have a reasonable degree of confidence in the scale. The overall homogeneity of 0.52 and its attendant delta of 25.91 affirms the good psychometric quality of this scale. In addition, now that we have a specified structure we can assess the internal consistency of the scale. Two measures are used, Mokken's rho and Cronbach's alpha. Both of these coefficients provide evidence of good reliability.

The table reveals the order of the indicators in terms of their incidence. Thus the indicators at the top of the table are more extreme and atypical and the picture emerges that the dangerous individual is, at base, likely to manifest behavioural and psychological features of anger, unpredictability and a history of aggression. The model tells us that it is most unlikely that an individual will present with one or more of the very serious indicators without also manifesting large numbers of those lower down the scale.

Table 3
The Dangerousness Scale

No.	Indicator	Homogeneity Index	Delta
59.	Use of force/weapons	0.47	21.08
58.	Carries weapons	0.45	20.61
62.	Criminal lifestyle	0.50	22.77
63.	Predatory behaviour	0.38	21.09
28.	Disinhibited	0.40	23.48
44	Considers therapist a threat	0.41	24.10
66	Refuses treatment	0.31	18.70
4	Atypical excitement	0.32	19.64
52	Threats to kill	0.43	26.35
61	Legal problems	0.36	22.40
23	Risk to other patients	0.40	25.13
25	Risk to staff	0.48	30.79
24	Risk to family	0.41	26.47
43	Considers therapist unhelpful	0.39	25.55
27	Non-compliant	0.36	23.35
26	Risk to strangers	0.52	33.47
32	Aggressive when intoxicated	0.30	19.51
60	History of criminal convictions	0.42	27.37
51	Threats to injure	0.54	34.11
7	Treatment unstable/failure	0.39	24.55
42	Unrealistic expectations	0.41	25.58
8	Personality disorder	0.37	22.71
21	Unreliable	0.47	28.11
6	Paranoia	0.46	27.22
29	Impulsive	0.53	30.85
9	History of aggression/violence	0.60	33.33
13	Recent hospital admission	0.34	17.68
18	Unpredictability	0.62	31.60
19	Anger/emotional problems	0.55	22.12
	Mokken's Homogeneity =	0.52	
	Mokken's Delta =	25.91	
	Mokken's Rho =	0.93	
	Cronbach's Alpha =	0.85	

The Mental Instability Scale

The Mental Instability scale contains fewer items than the other two but it still manifests a high degree of psychometric quality. Again, the data fit the model well and the internal

consistency estimates of reliability, although lower than the Dangerousness scale, are still within the generally recommended range for reliable instruments (Nunnally 1978).

Table 4
The Mental Health Instability Scale

No.	Indicator	Homogeneity Index	Delta
48	Recent absconding	0.48	11.49
47	History of absconding	0.42	11.80
12	Non-compliance with medication	0.31	11.46
3	Psychotic symptoms	0.37	12.53
5	Unstable mental condition	0.35	11.25
2	Current mental illness	0.37	10.45
1	History of mental illness	0.38	10.81
11	On psychiatric medication	0.34	9.41
Mokken's Homogeneity		=	0.43
Mokken's Delta		=	21.19
Mokken's Rho		=	0.82
Cronbach's Alpha		=	0.76

The scale also makes perfect sense in that the basal features are psychiatric medication, history of mental illness and current mental illness. More extreme warning signs are non-compliance and attempts at absconsion (which may not be applicable to many community patients).

The Self Harm Scale

The Self Harm scale also manifests good psychometric properties with slightly better internal consistency estimates than the Mental Instability scale. The fit of these indicators to the cumulative scale model is also good.

It is not surprising that a basal feature of self harm are interpersonal conflicts nor that multiple problems sit ate the extreme end of the continuum. However, it is rather more surprising to find history of child abuse at this extreme as we would anticipate that the historical variables

would tend to be lower down the scale. The suggestion is that patients with a history of child abuse are likely to manifest all the risk indicators that are also associated with self harm. Also a history of child abuse is a very critical indicator itself in the practice of self harm.

Table 5
The Self Harm Scale

No.	Indicator	Homogeneity Index	Delta
14	History of childhood abuse	0.34	12.90
54	Multiple problems	0.40	16.24
41	Oversensitive to advice	0.29	11.88
64	Unstable environment	0.32	13.19
40	Problems with negotiations	0.30	12.78
53	Facing high levels of stress	0.31	13.38
17	Suicidal ideation	0.29	12.39
15	History of self neglect	0.36	15.51
16	History of suicide attempts	0.39	16.88
22	Risk to self	0.39	16.22
20	Low self esteem	0.37	13.25
55	Interpersonal conflicts	0.46	15.01
Mokken's Homogeneity		=	0.42
Mokken's Delta		=	34.67
Mokken's Rho		=	0.86
Cronbach's Alpha		=	0.81

Inter-Rater Agreement

The three scale scores for the 72 patient profiles that were double rated were computed and correlations between the two forms were obtained. These emerged as 0.81 (Dangerousness), 0.77 (Mental Instability) and 0.81 (Self-Harm). These indicate that, despite some disagreement at the item level, there is a high degree of consistency between the scores obtained on different judges for the 3 cumulative scales. This is further proof of the reliability of the measures and demonstrates the utility of working with the super ordinate scale scores.

The Development of the Revised Version

The RAMAS was revised following the initial pilot stage of the evaluation. This was done in order to: a) broaden the range of features considered relevant to risk assessment and b) to

allow for the inclusion of a 4th scale allowing the assessment of vulnerability. The resulting revision was to produce a risk assessment checklist (RAC) of 85 items. Below is a summary of the analyses carried out so far on the revised RAC. These analyses are carried out on a heterogenous sample of 213 patient assessments.

The Vulnerability Scale

In order to identify an optimal vulnerability scale a step-wise procedure was used (Hammond 1998). This identified 13 scalable items according to the cumulative stochastic model of Mokken (1971). This scale is presented in table 6. From this it can be seen that the cumulative nature of the scale begins at the point of stress and conflict in the patient's life. Risk of vulnerability then rises as the less common features occur. It is interesting to note that the less common features that are more specific to vulnerability are the personal characteristics of naivety and trust.

Table 6:
Mokken Model Parameters for Vulnerability

No.	Indicator	Homogeneity Index	Delta
67.	Trust of strangers	0.412	10.45
69.	Naive	0.365	12.48
65.	Susceptible	0.415	14.74
66.	Over-disclosing	0.274	9.85
74.	Recent Hosp. Admis.	0.326	12.33
76.	No close relationships	0.342	13.04
71.	Unstable Environment	0.314	12.00
68.	Needy/Isolated	0.374	14.36
75.	Multiple Problems	0.450	17.17
83.	History of vulnerability	0.420	15.79
29.	Emot. Control problem	0.312	11.47
72.	Interpersonal Conflict	0.381	13.60
70.	High levels of stress	0.352	12.19
Mokken's Homogeneity		=	0.36
Mokken's Delta		=	33.19
Mokken's Rho		=	0.87
Cronbach's Alpha		=	0.84

The fit to the Mokken model is good without being outstanding. The overall scalability coefficient of 0.36 indicates a reasonable fit (Mokken 1971) and it can be seen that this is highly statistically significant. The Δ^* coefficients are normally distributed parameters with

mean of zero and variance of unity. Thus each item manifests a statistically significant homogeneity. The weakest item in the model is Over-Disclosing. The overall reliability of the scale is 0.87.

The Mokken Model is non-parametric and does not have the power of the parametric cumulative model known as the Rasch model. A clear advantage of the Rasch model is that it allows us to generate an index of person fit along with a highly accurate statistically derived person score. Due to the stricter assumptions concerning the distribution of the underlying latent trait (risk of vulnerability) it is likely to be harder to fit the data to this model. The Rasch model fit for the Vulnerability scale is reported in table 7.

Table 7
Rasch Model Parameters for the Vulnerability Scale

Item	Difficulty	δ	S.E,	Fit
67. Trust of strangers	0.092	-1.511	0.332	-1.521
69. Naive	0.168	-0.716	0.264	-0.646
65. Susceptible	0.183	-0.592	0.256	-0.080
66. Over-disclosing	0.191	-0.533	0.252	-0.662
74. Recent Hosp. Admis.	0.229	-0.258	0.237	-0.260
76. No close relationships	0.237	-0.207	0.234	0.066
71. Unstable Environment	0.244	-0.156	0.232	-0.057
68. Needy/Isolated	0.298	0.170	0.219	-0.495
75. Multiple Problems	0.344	0.425	0.211	-2.260
83. History of vulnerability	0.382	0.625	0.206	-1.049
29. Emot. Control problem	0.412	0.780	0.203	0.029
72. Interpersonal Conflict	0.443	0.930	0.201	-0.100
70. High levels of stress	0.466	1.042	0.200	1.990

This reveals a very good level of fit to the Rasch model. The index of fit is normally distributed with a mean of 0 and a standard deviation of 1. Thus an index with an absolute value exceeding 1.96 is significant at 5% and if it exceeds 2.36 it is significant at 1%. A significant fit index indicates that the item in question *does not* fit the model. Thus we can see that two items show poor fit at the 5% criteria of significance. These are multiple

problems and high levels of stress. However, it is more typical to use the 1% criteria in interpreting fit to a Rasch model because of the inflated effects of chance with multiple items. If we apply this more relaxed criterion it is apparent that all of the items manifest a reasonable fit.

The implications of this are that estimates of a person's vulnerability may be generated using a stringent statistical criteria and, more importantly, a statistical basis for assessing person fit can be derived. Due to the statistical advantages of the Rasch model and the hope of moving over to a computerised system of scoring and monitoring of patient risk profiles, it was deemed important to try to utilise this model.

[The Original Scales](#)

Above we saw how the original Dangerousness, Self-Harm and Mental Instability scales were successfully fitted to a Mokken model we now fit these scales to a Rasch model using the larger pooled sample of 471.

[The Dangerousness Scale](#)

In table 8 the features associated with dangerousness are fitted to the Rasch model. The result is a remarkably good fit. The frequently occurring features such as history of violence and impulsivity focusing into the highly specific markers of preoccupation with violent materials and cruelty to animals (which may be representative of an underlying psychopathy) along the scale. Again there is a clear logic to the scaling of these features that provides a degree of content validity. The reliability of this scale (Mokken's Rho) is 0.91 which indicates a high degree of internal consistency.

[The Self Harm Scale](#)

In table 9 the Self Harm scale is presented. Again there is a pretty good fit to this scale although one item, Refuses Treatment, appears to manifest a degree of misfit. Rather than

exclude this item at this point it may be necessary to examine the content of the checklist to see whether more relevant features could be identified. At the moment this looks like the weakest scale and may require some consideration although the fit is not bad and the reliability (Mokken's Rho) is 0.85. History of self harm and rater judgement about risk to self are the most commonly occurring of these features and thus less predictive, the more specific self-harm features concern clinical depression and insomnia as well as clear evidence of self harming.

TABLE 8
Fitting Dangerousness to a Rasch Model

Item	Difficulty	d	S.E,	Fit
1. History of Violence	0.870	-3.007	0.292	-1.065
2. Arrest for violence	0.610	-1.271	0.209	0.816
25. Risk to others (Unknown)	0.561	-1.024	0.206	-0.328
50. Impulsive	0.537	-0.904	0.205	-0.149
26. Risk to others (Known)	0.528	-0.864	0.204	0.327
29. Emotional Control	0.512	-0.784	0.204	-0.007
20. Use of force/weapons	0.496	-0.704	0.204	0.937
48. Substance misuse	0.496	-0.704	0.204	0.846
16. Threats to injure	0.480	-0.625	0.204	-1.541
22. Personality disorder	0.472	-0.585	0.204	0.307
49. Unpredictable	0.447	-0.465	0.204	-2.169
7. Childhood Conduct Disorder	0.398	-0.222	0.207	0.200
28. Risk to Family	0.374	-0.098	0.209	1.522
17. Threats to Kill	0.293	0.340	0.220	-0.840
27. Risk to Staff	0.293	0.340	0.220	-0.730
80. Evidence of Aggression	0.276	0.434	0.223	-0.735
19. Carries Weapons	0.268	0.482	0.225	0.272
31. Feels Threatened	0.252	0.581	0.229	0.442
60. Predatory Behaviour	0.220	0.791	0.239	-0.530
14. Menacing Phone Calls	0.163	1.214	0.265	-0.107
61. Criminal Lifestyle	0.163	1.214	0.265	0.227
3. Hostage Taking	0.106	1.765	0.313	-0.458
40. Likes Violent Material	0.106	1.765	0.313	0.310
15. Aggression Towards Animals	0.065	2.332	0.383	-0.106

The Mental Instability Scale

The Mental Instability scale is summarised in table 10. Again a pretty good fit is found and a reliability estimate of 0.94 is obtained. Clearly this patient group contains many

who have been on some form of psychiatric medication but the more critical or specific features are those related to compliance and frequent hospital admissions.

TABLE 9
Fitting Self Harm to the Rasch Model

Item	Difficulty	δ	S.E,	Fit
24. Risk to Self	0.590	-1.455	0.229	-1.757
10. History of Self harm	0.533	-1.173	0.228	-1.988
8. Parasuicide History	0.438	-0.700	0.232	-0.789
30. Refuses Treatment	0.362	-0.301	0.240	4.068
77. Feels Undervalued	0.314	-0.034	0.248	1.535
62. Hopelessness	0.305	0.021	0.249	-0.919
46. Suicidal Ideation	0.229	0.504	0.270	-1.056
73. Insomnia	0.171	0.935	0.296	-0.745
82. Evidence of Self harm	0.162	1.016	0.302	-0.555
35. Clinically Depressed	0.143	1.187	0.316	-1.109

TABLE 10
Fitting Mental Instability to the Rasch Model

Item	Difficulty	?	S.E,	Fit
33. Psychiatric Medication	0.933	-4.328	0.762	1.972
5. History of Mental Illness	0.896	-2.061	0.379	0.939
34. Current Mental Illness	0.843	-1.403	0.323	-2.165
21. Paranoia	0.670	0.000	0.250	1.227
38. Hallucinations/Delusions	0.591	0.479	0.238	0.311
81. Evidence of Mental Instability	0.539	0.777	0.233	0.675
36. Unstable Mental Condition	0.496	1.019	0.231	-1.829
23. Treatment Unstable	0.400	1.543	0.231	-1.862
37. Frequent Admissions	0.357	1.785	0.233	1.697
39. Non Compliance w. med.	0.287	2.190	0.242	0.089

3.6 Discussion

The present study has demonstrated that the RAMAS checklist measures four clearly identifiable latencies each related to a discrete area of risk, Dangerousness, Mental Instability, Vulnerability and Self Harm. The dangerousness scale identifies the risk of harming others, the mental instability scale identifies the risk of mental health crises and destabilisation and the self harm scale identifies the risk of self harm and suicide. The structure that has been identified here is perfectly rational and consistent with the psychiatric literature (Foulds 1976; Surtees and Kendell 1979; De Jong and Molenaar 1987). The psychometric properties of the scales is excellent and allows for a simple integrated and discriminating risk assessment profile to be drawn up for each patient.

The fact that the RAMAS scales can be fitted to a cumulative model raises a number of interesting issues. On a practical front, the explicit ordering of risk factors enables an identification of risk level in terms of the position a patient is along the specific risk scale. It is important to remember that this is a probabilistic model and there will be patients for whom this ordering does not apply perfectly but this model is demonstrated to be sufficiently robust to accurately identify individual risk level. Furthermore it is possible to calculate the degree of misfit a patient manifests (Meijer and Sijtsma 1993). This provides a measure of the unpredictability of the patient's profile which may be important information in making a risk judgement.

Among the benefits of the psychometric modelling approach is the fact that the structures derived inform a theoretical definition of risk. It is now possible to conceptualise dangerousness as an accumulation risk factors and furthermore the order in which that accumulation typically occurs is known. This cumulative scaling of risk points to a number of potential avenues for further research. Not least among these is an empirical examination of

the development of dangerous behaviour and the possibility of identifying the escalation routes of risk.

Another more obvious benefit concerns accuracy and the promise of ready evaluation and audit. The degree of accuracy of the statistical estimates of risk is directly measurable first by evaluating the fit of the whole model to the data and second by examining the individual fit of the different patients and risk indicators themselves ; Meijer, Sijtsma and Molenaar 1996). Thus, along with the patient's risk score will come a predictability score and an index of fit.

The Mokken model applied in this study is a weaker model than the more powerful Rasch model but a cumulative structure has been clearly demonstrated for three discrete areas of psychiatric risk. It is now possible to consider fitting the data to a Rasch model. This would confer a number of further advantages. For example, it is then possible to derive the standard error of estimate for each patient's individual risk score. In addition, it becomes possible to propose a truly dynamic model which utilises information gathered on an ongoing basis such as the longitudinal Rasch model proposed by Fischer (1989). This offers the hope of a truly dynamic psychometric risk assessment model in which change is integrated into the estimation procedure.

It should also be stressed that the one-parameter models described here are sample free. In other words when the model is fitted, the parameters derived from the sample are statistically robust across samples. That said, a regular assessment of differential item functioning and model bias is necessary for any practical implementation of any such model. The models are mathematically transparent and, once fitted, offer a defensible basis for assessment.

Steadman et al (1993) identify 3 different strategies for studies of risk assessment.. Strategy 1 is to study the relationship of the risk factors to clinical judgement. Strategy 2 is to study the relationship of clinical judgement to the outcome criterion. Strategy 3 is to study the

relationship of the risk factors to the outcome criterion. Steadman et al (1993) neglected to consider the important process of construct validation. This is all the more important in the context of risk assessment because the definitions are unclear and the outcome criteria are generally unreliable.

Nevertheless ultimate validation lies in strategy 3 which requires a prospective approach. For the purpose of this study strategy 1 was used, this must be viewed as a preliminary validation but the primary focus of this paper is the evaluation of the cumulative psychometric model. A further prospective study is currently in progress.

The validation results are preliminary but promising and suggest that there is a consistency about the way that the RAMAS scales relate to both subjective clinical judgement and the presenting problem of the patient.

In practice, risk assessment itself is informed by but not dictated by scores derived from risk indicator checklists. It will always be necessary to integrate idiographic and contextual information into any risk assessment and this will often imply the use of clinical judgement rather than statistical prediction. A full RAMAS implementation makes this process explicit but coupled with the use of cumulative scales the process of risk assessment is greatly eased and the basis for the judgement is made more transparent.

3.7 Conclusions

Without being too complacent, it would appear that the structure of the checklist scales is emerging as robust and psychometrically useful. One very satisfying feature of these data is the fact that we can move from the non-parametric Mokken model to a more robust parametric model (Rasch) while still maintaining the advantage of having cumulative scales. The great advantages of being able to fit the data to the Rasch model are as follows:

1. We can conceptualize risk as a continuous potential for each problematic behaviour along which risk profiles may be discriminated.
2. We can derive statistically robust estimates of any individual patient's position along the risk continua (the risk score).
3. We can derive indices of fit for each person such that the unpredictable and idiosyncratic patient (perhaps having many rare features but few common ones) can be identified.
4. The psychometric model will ultimately allow us to explore change and to be alerted when dynamic features begin to shift into a high risk modality.
5. The model lends itself to the computerisation of the RAMAS by becoming the underlying statistical engine for scoring and graphical presentation.

The next section reports on the applications of RAMAS.

4. Applications

4.1 Context

This research and development project took place during a period of major change within the NHS. **Modernising Mental Health Services (DOH 1998)** outlined the Government's framework for change. The review of the Mental Health Act is a key part of the overall modernisation strategy. Consultation on the new Mental Health Act is currently taking place and the Government hopes the full formal proposals will be published next year 2000 / 2001.

Meanwhile emphasis throughout the NHS has changed in line with the modernisation strategy towards evidence based practice and treatment. This means that the increasing trend and pressure is to provide only assessment, treatment and resources which are of proven therapeutic benefit.

This has implications for assessment, treatment, intervention, service organisation / provision and staff roles. The implications of this for general and mental health are immense.

The move towards evidence based practice and Clinical Governance requires, as a minimum that staff appraise and apply the research data available to them. Furthermore, it requires that services are able to audit their own practice and to conduct research which is appropriate to their practice. A greater research emphasis in health services is now being implemented vigorously throughout the NHS in the form of the research and development initiative, Peckham (1991). All this together, fundamentally involves a willingness to adapt services and practice to achieve better outcomes for service users and carers. These attitudes and the underlying skills and knowledge associated with effectiveness need to be acquired, sustained and developed in training and through_robust, evidence based and audited systems.

(ii) Clinical Governance

Clinical Governance is essentially, a tool for assisting quality. It requires action by health providers to ensure Four major activities as follows.

- | |
|---|
| 1. Risks are avoided |
| 2. Adverse events are rapidly detected, openly investigated and lessons learned |
| 3. Good practice is rapidly disseminated |
| 4. Systems are in place to ensure continuous improvement in clinical care |

This Report provides evidence of the RAMAS R & D projects contribution to each of these four areas.

(iii) National Service Frameworks

The National Service Framework (NSF) for Mental Health (1999) is a major policy and strategic element of the NHS Modernisation Programme. The NSF sets out the standards, plans and mechanisms for implementation over the 10 year period to 2009.

The NSF recognises that 90% of mental health care is provided in primary settings (families, GP practices and community) and emphasises shared responsibility and partnerships across all agencies providing care.

There are seven national standards, the following table outlines a summary each of these.

Summary of National Service Framework for Mental Health

NSF Standard

1. Equal opportunities to all in mental health promotion
2. Common Mental Disorders CMD (e.g. Depression, Anxiety) sufferers should have needs assessed and access to effective treatment
3. CMD sufferers should have 24 hours access to local care and NHS Direct
4. Severe Mental Illness (SMI) e.g. patients care plans (CPA) should advise action to take in crises and on responding to special needs
5. SMI inpatients should have timely access to 'least restrictive' local bed and written aftercare plan
6. Carers of CPA patients should have their own care plan
7. Preventing suicides should be further helped by risk assessment training, suicide audits and support to local prison staff

Performance indicators and milestones have been set out for each standard by which service delivery can be measured.

The NSF standards will require risk managers to have at a minimum the following elements in place:-

- Guidelines for standard practice;
 - Protocols for referral → Referral pathways
 - Access to service → Good information about the service
- Evidence based care informed by research
- Specify and match clients to treatment
- Audit: waiting times, access etc.
- Outcome monitoring using standardised methods
- Involve staff of all disciplines
- Provide supervision and support

This Report argues that RAMAS is consistent with and supportive to the NHS modernisation programme and that it addresses Clinical Governance and NSF issues directly.

The major cornerstone for success has been the development of the evidence base for RAMAS risk assessment, reported on in the previous chapter.

Once the psychometric status of the Risk Assessment Checklist (RAC) was established (Aim one of the project), the strategy was for rapid translation of findings into multi-disciplinary - interagency practice. Funding was utilised in three important areas:-

1. Publication of the Professional Manual, the Protocols and Factsheets.
2. Elicitation of staff training and Practice Needs.
3. Provision of staff training and support.

These essential building blocks will now be reported on in turn.

4.2 Translating Research into Practice

(1) Publication of the RAMAS Professional Manual, the Protocols and Factsheets

The RAMAS Professional Manual, the Protocols and the guidances had been written in 1996 / 1997 and R & D funding enabled us to purchase professional publication of these. A copy of the Manual and all printed materials are provided with this report. Of note is the fact that the printers won a National Award for the clarity and presentation of the RAMAS Manual.

The cost of the art work and printing of the Manual and RAMAS Forms was almost £6,500 (details provided in the financial report) and we believe that this was money well spent.

A survey of staff views in 1996 / 1997 had informed us that what clinicians and practitioners wanted was clearly presented, properly printed materials both for training and for use in ongoing practice. We wanted to deliver on this and funding was crucial to this endeavour. All trained RAMAS Users have their own Manual and extra copies are available for services / clinics using the system. Thus staff from all disciplines now have guidelines for standard practice available to them.

Our surveys suggest that staff are very happy with the presentation and with the clarity of the materials and that they find the publications enormously useful in practice.

A copy of the training report is provided with this document.

The publication of RAMAS Protocols and the RAMAS Manual in 1999 was a major building block for translating our research into practice both in the Health Service and in other key local agencies in Surrey.

(ii) Elicitation of Staff Training and Practice Needs

We have tried to provide the NSF risk management standards and to provide synergy between National Policy, public safety and individual care needs. Staff have been crucial to the process of providing relevant, evidence based service provision, education, training and support through RAMAS.

RAMAS is extraordinarily broad based, both in remit and in the interchange both within and across agencies and services. It has to be if we are to provide effective risk management.

We have recognised that if we are to make it work, staff from all disciplines and agencies must

- (1) find it to be relevant to their needs and practice
- (2) must understand the values and principles of effective risk management, and the broader picture
- (3) be trained on the approach.

We believe there are lessons to be learned from both the Public Inquiries and the National Confidential Inquiry into homicides and suicides and from the literature. Our early training programmes in 1996 and 1997 provided a great deal of information regarding training and practice needs of clinicians and practitioners both within the NHS and in other key agencies such as Social Services, Probation, Housing and Police.

The current funding enabled us to have a number of focus group opportunities which further informed us of staff training and practice needs. The involvement of senior clinicians and practitioners has been crucial not just on risk management but also on risk reduction strategies.

Similarly, BLIP (Blue Light Information Process) see *O'Rourke et al (1999)* provided insights into training and practice needs. Of note was the finding that NHS professionals are not by and large, trained or equipped in the complexity of delivery of the public safety and individual care agenda. Many reported to us that they were not trained or supported in inter-professional or interagency issues, especially where risk is concerned. The rapid changes brought about by community care and by the public safety agenda have placed a greater premium on information sharing and collaborative working across agencies and services and professionals were acutely aware of this. Many professionals were not however aware of policy guidance regarding information sharing. They were not aware of documents such as The Department of Health Guidelines on Confidentiality and Information Sharing, Building Bridges (DOH 1995) 'Developing Partnerships in Mental Health' Green Paper (1997) or legal provisions through the Crime and Disorder Act 1998.

Evidence from our work suggested that the main barriers to effective joint working between agencies have been:-

- Gaps in knowledge and information regarding risk and interagency work
- Anxiety / Fear (of many things including role-blurring, de-skilling and concerns about confidentiality)
- Language and measurement barriers
- Lack of joint Protocols: every service using different systems and protocols
- Lack of management support through the 'whole-system' for a joint approach
- Absence of joint training and support

The production of the RAMAS Professional Manual and the standardised Protocols assisted in breaking down some of these barriers and we have begun to address these and other

concerns through staff training and the RAMAS Support Network. The success of BLIP has also done much to build momentum and confidence not just in joint working, but in effective risk management also.

4.3 Staff Training and Support

(1) Local Expertise

A full account on the training programme is provided by O'Rourke and Titley, 1999 and 2000. The report is entitled "Towards safe sound and supporting service: staff training and support" and is presented with this report.

The RAMAS Training Programme is organised into three levels as follows:-

RAMAS Training	
Level I	Basic Awareness in Risk Assessment, Management and Public Safety
Level II	Specialist training on RAMAS leading to registration as RAMAS User and entry to National RAMAS Network
Level III	Trained Trainer and registration as RAMAS Consultant

Funding has enabled us to train the following numbers of professionals across Surrey between March 1998 - March 2000.

- Level I** Over 200 people
- Level II** 118 Clinicians and Practitioners
- Level III** 8, Clinical Psychologists (5), Nurse (1), Probation Officers (2)

These figures are Surrey figures only. Of note is the fact that a further 157 have been trained to RAMAS Level II nationally.

All Clinicians and Practitioners are asked to complete an evaluation of (1) RAMAS and (2) the Training Programme. A summary of the main findings of the training evaluation is provided in the box below.

A Summary of RAMAS Training Evaluation Findings

Feedback on the training course revealed that:-

- RAMAS was rated 'excellent' by 90% of respondents
- The surveys achieved a 80% response rate.
- the course itself was rated excellent by 96% of respondents

Feedback on RAMAS revealed that:-

- RAMAS was rated as excellent by 90% of those familiar with the systems
- 96% of those trained reported that they intended to use RAMAS routinely in their practice
- 76% of trained professionals that RAMAS would be crucial to their practice

A full report is provided by O'Rourke and Titley (2000)

of note was the fact that many professionals who trained commented (without prompts) on how flexible RAMAS was and on how they valued RAMAS' ability to provide a common language for information sharing and decision making across agencies and settings. Many professionals remarked that they believed that services are "not bad at risk assessment or care planning" but what they are bad at is following things up, monitoring, audit and review. The RAMAS Supervision Review (SR) form has been particularly welcomed by professionals

in this regard. Evaluation of the RAMAS Training Programme suggests that the main benefits of training are as follows:-

RAMAS Training adds value to services by providing

- Staff better trained on Risk Assessment, Management and Audit.
- Supervised/Audited Care Plans.
- A risk monitoring system.
- A common language for inter-agency communication about risk.
- A standardized Approach: helps closer working relationships, clear and shared goals.
- A whole-systems Approach: helps meet multiple needs and vulnerabilities across services.
- Staff trained on solution-focused system.
- A psychometric measure plus - clear standardised protocol that facilitates scrutiny and enables us to develop national standards.
- A system which 'travels' with the client across both geographical and agency boundaries.
- A system, which is evidence, based and is flexible and capable of adapting as new research evidence comes forward.

(ii) Ongoing Practice Development and Support

Once clinicians / practitioners have trained on RAMAS they are asked to register as RAMAS Users and are thereafter supported either through supervision on a one to one or case by case basis or through the RAMAS Support Network.

The RAMAS Support Network is an informal, interagency RAMAS Users Group which meets monthly and provides practitioners with ongoing advice, support and consultation on RAMAS use in practice. This group has been consistently well attended, and has been perceived as an excellent opportunity to address problems in practice.

4.4 The Impact of RAMAS on Practice

(i) Partnerships / Interagency Work

RAMAS provides a framework for agencies to develop a comprehensive system for effective risk management and safe practice.

RAMAS and its Support Network provides the vehicle for interagency communication, information sharing and joint case management. Guidance for standard practice: protocols for referral, referral pathways and access to service are all in place in line with the NSF. (See Manual page 42 for RAMAS Network).

Guidance for standard practice regarding confidentiality and Information sharing is also in place. (See Manual page 7 & 8).

We have also undertaken two research in practice studies with Surrey Probation Service and Leicester University, regarding matching clients to treatment and offender profiling. It is intended that these will be published in due course.

RAMAS has provided the framework for the development of a local interagency response to high risk / crisis monitoring and management in Guildford, namely BLIP. The Blue Light Information Process (BLIP) is a multi-agency process to assess, monitor and assist in the management of a dangerous or potentially dangerous individual who presents a threat to themselves or the community which is life taking, life violating or life threatening thereby to increase the public safety within Guildford Borough. BLIP was developed in association with RAMAS and its conceptual framework, theoretical underpinnings and language are derived from RAMAS. BLIP is designed to be integrated into RAMAS and vice versa. All BLIP

participating agencies have been trained to a minimum of Level One RAMAS training. A full report on the relevance, importance and impact of RAMAS through BLIP is provided by O'Rourke, Smith and McGeachy (1999) 'Public Safety: The Challenge Confronted'. Section 4.6 provides a summary of the main findings from BLIP.

(ii) Service Users and Carers

RAMAS considers patients / clients not as passive recipients of care but as actively involved core contributors to high quality, safe, sound, supportive service.

The New NHS: Modern, Dependable, A First Class Service and **Modernising Mental Health Services** all set out a clear agenda for user involvement in the development of better quality mental health services.

Exciting the interest of and engaging clients / patients in case management is central to RAMAS. Meeting the spectrum of patients needs is also central to the RAMAS approach to effective risk management. User involvement is seen as an essential tool for driving up the quality of service provision.

To this end a Service Users Charter has been developed and the authors are working with the Mental Health Foundation to strengthen the Human Rights Framework to inform RAMAS standards, case management and the training and attitudes of staff in services using RAMAS.

(iii) Non-Engaging, Non-Compliant Patients / Clients

Research and clinical practice with RAMAS lends some credibility to the assertion that non-compliance and non-engagement is a two way process. The adage "past behaviour best predicts future behaviour" has, we believe led many patients to conclude that there is little

point in engaging with mental health services that hold this view, and who can blame them. If “you are finished before you’ve started” (as one patient reported) then why engage in the first place?

The Project Team has worked hard and continues to work at all levels (Staff Training, Research, Protocols and Policy Development) to break down barriers and open up possibilities for more optimistic solution focused approaches to risk and case management generally.

The BLIP was set up to address issues relating to 24 hour crisis / support and communication.

The Needs Assessment process was designed to enable services to be more sensitive and responsive to the genuine broad spectrum needs of Service Users. RAMAS enables Mental Health Services to collaborate and communicate clear and shared goals in partnership with other agencies and services. The past year 1999 - 2000 has focused especially on interagency training and development in order to enhance communication and good practice in this area.

The Skills Assessment Process has similarly been designed to enhance engagement and self esteem in “difficult to manage” “difficult to engage” patients. The Process actively seeks out the individual’s strengths, resources and supports in order to achieve the best possible outcomes for both public safety and also, importantly, individual care.

Patients regularly and consistently remark on the feeling of fairness and justice that RAMAS provides.

We are very much aware that RAMAS needs to continue to adapt to a variety of needs and challenges to enable the spectrum of services to engage with people and work in partnership.

The RAMAS emphasis on “People before Paper” and our interagency partnerships are essential aspects of our ongoing commitment to addressing the needs of non-engaging or “untreatable” non-engaging patients. Funding will be sought to strengthen our focus and practice on this.

(iv) Patients with Personality Disorder

The challenge to public safety presented by a small minority of people with severe, enduring and treatment resistant personality disorder brings together criminal justice and health and social policy. Dealing with this challenge raises complex and sensitive ethical questions. The consultation paper “Managing dangerous people with severe personality disorder” DOH (1999) sets out the Government’s policy objectives for addressing these issues.

The focus of these proposals, as with the proposals for the Reform of the Mental Health Act 1983 DOH (1999), is on managing risk and providing better outcomes within a framework that safeguards the rights of individuals and the interests of the public.

The special challenges of severe personality disorder (government label not a diagnostic category) require effective risk management such as RAMAS provides. We believe that RAMAS properly implemented is robust enough to deliver retrospectively defensible assessment, management and supervision review programmes for these patients. This Surrey Hampshire Borders Risk Management System provides for:-

- Comprehensive assessment, monitoring, management and supervision
- Treatment Integrity
- A highly trained staff

- Improved treatment and management options in partnership with patients, their families and other key agencies
- Joint supervision / case management across agencies and gradual process of discharge (where appropriate).

We are clear that decisions on the shape of services provided must fit with the framework of the proposals of the new Mental Health Act, and other policy initiatives for example the Lord Chancellor's statement of proposals for mental incapacity Making Decisions, 1999 and other relevant measures.

4.5 The Blue Light Information Process

The Blue Light Information Process (BLIP) is an approach to enhance communication between services involved in public safety and individual care. BLIP has been developed as an information sharing and support system to assist clinicians, practitioners and police, manage and audit risk in community settings. BLIP was developed in association with RAMAS (Risk Assessment, Management and Audit System, O'Rourke (1996) and is intended to assist services and agencies develop common strategies to manage dangerous and at risk behaviours.

In setting BLIP up, we examined the literature and it seemed that the information required for services to make the system to some degree fail-safe already existed. (Building Bridges 1995, The Spectrum of Care 1996). In discussion with organisations locally it became clear that a wide range of key agencies recognised that no single agency can either meet all the needs of those at risk or posing risk, or act alone to effectively manage public safety and individual care. We noted that behaviour(s) which increase risk can be displayed by both individuals and organisations. We wanted to demonstrate that we had learned the lessons of recent public inquiries into homicides and suicides in the community (Sheppard 1996). We

hoped to show that safe services are the product of agencies working together defining their shared goals and recognising that each provides only one element of the approach.

BLIP is a mechanism, operating 24 hours a day, 365 days a year, whereby agencies can quickly and effectively pass on information in circumstances where an individual is perceived as being either “a risk” or “at risk” in the community - and where co-ordinated support or management is not in place or unidentified.

The first pilot phase of Guildford’s BLIP initiative has proved to be an outstanding success since its inception in November 1997. It has demonstrated that it is possible for a wide range of agencies to work together on the common goals of public safety and individual care.

A total of 43 BLIPS were issued between November 1997 and March 1999. 88% of BLIPS related to men, 12% to women.

The causes of concern which generated the BLIP (warnings) detailed Drugs and/or Alcohol at 28.5%; Mental Disorder at 22.5%; Serious Violence at 18%; and Suicide (Deliberate Self Harm) at 14%; Other warnings arose from Weapons - 9%; Threats to Kill - 4.5%; Sex Offences - 2.5%; Homicide - 1%; and Arson (Endanger Life) 1%. (See Table 2)

The development of effective working relationships between agencies working with people who pose a risk to themselves or others has we believe had significant benefits including:-

- Improved information exchange about risk in the local area
- Improvements in overall risk assessment and management of those presenting a risk of public harm, not just more comprehensive information but also making risk assessments more systematic, clear and communicable
- Increased objectivity and clarity and effective decision support with regard to risk

- Increased opportunities for early intervention, harm reduction and reduction of offending or people with alcohol, drug and mental health problems

The key to the success of the BLIP Project was probably, the fact that the agencies and particularly the individuals involved in setting up BLIP had developed sufficient trust and respect for one another in their varying professional capacities, to be able to jointly resolve the more sensitive issues, such as confidentiality, which could have stood in the way of the project. As the BLIP Steering Group was drawn together, it became obvious that the managers of the various agencies involved were already accustomed to working together and welcomed the opportunity to jointly develop good working practice. The existence of this mature support network encompassing both the statutory and voluntary sectors was clearly a major factor in generating momentum as it got under way.

4.6 Audit

RAMAS sets out the principles, protocols, frameworks and language which underpin effective risk and case management practice. The following standard practice guidelines are in place: Protocols for referral, risk management pathways, supervision review, crisis management and ongoing case management.

It is vital that we audit all elements of RAMAS.

Users of the system must be trained, training must be audited and the systems subject to Audit, in order to meet Clinical Governance and the NSF and to give re-assurance and confidence to patients, carers, clinicians, practitioners, purchasers and commissioners of services. The training strategy ensures that standards are reached and maintained by practitioners, clinicians and other users of the system. With its emphasis on review and monitoring, RAMAS clearly implies that risk assessment and management is not a one-off

event but part on an on-going process of assessment, management review and re-assessment services. RAMAS users are asked to identify how the implementation of RAMAS will be audited, how frequently and by whom, within their service.

Key areas for Audit include:-

- RAMAS and RAMAS Network Operational Policies
- Information Systems, Records and Record Keeping
- Communication with referrers and other professionals
- Communication with clients and consent
- Communication with family and significant others
- RAMAS / BLIP update communications
- Incident Reporting Arrangements
- Out of hours, safety net systems
- Interagency Review

All Registered RAMAS Users are assisted in monitoring and evaluating standards against their professional and their organisation's codes:

- by evaluating individual cases, obtaining client and 'other' feedback and measuring their performance against professional standards
- by contributing to the development of team or inter-agency RAMAS audit projects.
- by using appropriate measures to assess outcome with at least a sample of clients

External audit of Risk Management has been via the following routes:-

1. Review by Chief Scientist at Ashworth Hospital
2. Evaluation by Professor of Nursing at University of Surrey
3. Submission of bid to Mental Health Foundation
4. Service Users (we are currently working on providing worked examples for awareness raising and training purposes).
5. Conference Papers (See Annexe A)

Surrey Hampshire Borders NHS Trust, Audit Department, are currently assisting us begin the process of audit with BLIP.

4.7 Dissemination and contributing to National Standards

It is our view that service strategies and innovations should not be developed in isolation from each other or the wider field of academic or empirical research in this area. There is a great need to integrate the almost separate worlds of academic research, empirical findings, clinical practice, criminal justice and social care.

We believe that there is a need for a national approach to disseminating findings and lessons learned on public safety, risk and individual care matters. To this end we have delivered a broad spectrum approach to disseminating the RAMAS Approach. We have published in peer reviewed journals, we have written in user-focused and mental health charity journals, practice journals and we have presented at local, national and international conferences. We have provided evidence to the House of Commons Select Committee on Personality Disorder, to the Scottish Home and Health Committee on the Treatability Issue and to the Department of Health / Home Office Project Team on Effective Practice.

A list of our main achievements is presented in Annexe A. Of note is the fact that over 400 copies of “RAMAS The Partnership Approach to Risk” has been requested by services all over the UK.

Towards National Standards

The multiple needs and vulnerabilities of people who pose risk means that services need to work with a wide range of “partners in care”.

The successful care of people posing risk cannot fall solely to mental health services. A recent paper by Conway, Melzer and Hale (1994) noted that “social interventions are likely to be crucial to achieving ‘Health of the Nation’ targets, as improving mental state seems in itself to be insufficient”.

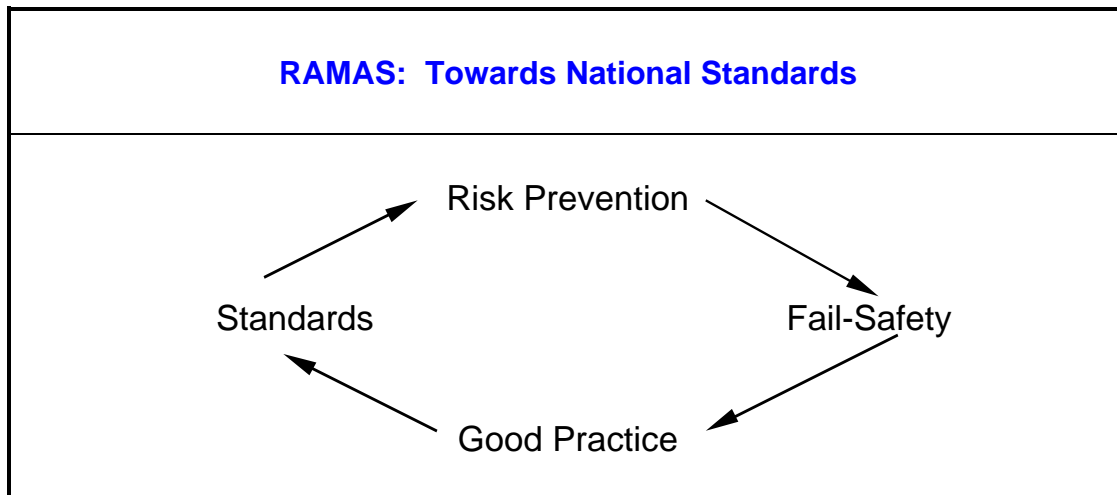
RAMAS intends shared goals for agencies. It allows shared training priorities to be agreed and it assists communication between agencies.

RAMAS provides for accurate, complete and communicable risk management. Risk has to be assessed and managed over time and across agencies. The inquiries have often noted that several services know a part of the history, but it was never communicated or jointly reviewed and consequently lost. RAMAS intends services to note trends and prevent problems from re-occurring and in this way contribute to the NSF and other agencies risk management strategies. Partnership working often provides increased access to additional sources of funding and we plan to exploit opportunities in partnership with network agencies.

RAMAS facilitates all agencies to work together to create integrated services which will enhance the client’s safety and reassure the wider community.

Funding will be sought to strengthen our local expertise and to continue our impact on NSF and the National agenda of public safety and effective risk management.

The following figure summarises the approach of this work to achieving National Standards for safe and effective risk management.



The details include but are not limited to the following:-

Risk Prevention: Accurate, omplete, communicable risk assessment
 Clear and shared risk management
 Needs led case management
 Preventitive measures identified and implemented

Fail Safety: Evidence based decision making and care
 A better trained and supervised workforce
 Better communication and joint working across agencies
 Timely supervision and review
 Integrated care

Good Practice: Highly trained staff
 Clear and shared goals for public safety and individual care
 Safeguards for service users
 Plans monitored, supervised and reviewed
 Life long learning through ongoing research
 Supervision and training
 Better value for money than present arrangements
 Guidelines for good practice (Professional Bodies & RAMAS Training)
 Standardised, evidence based, Joint Protocols
 (RAMAS, RAC, RM, MDS, SR and BLIP)

Clinical Governance, NSF, N.I.C.E., evidenced based practice
(Home Office) and ISO 9000 (other agencies) Frameworks

External Audit and Review
Ongoing Research and Psychometric Development
Consistent with Human Rights Law
Capable of adapting as new evidence comes forward.

Our work Towards National Standards is based on extensive informal discussions locally and nationally over the past five years, involving clinicians and practitioners from health, criminal justice agencies (Police, Magistrates, Probation), Social Services, Housing and the voluntary sector.

Our intention is to seek funding to continue this work and we have established collaborative arrangements with the States of Jersey (all agencies) to test RAMAS as a vehicle for effective public safety and individual care.

5. The Way Forward

The purpose of this report has been to provide an account of work so far. However it must be emphasised that there is still much to do.

It is apparent that the project largely meets its stated aims and has through RAMAS provided:-

1. A vehicle and common language to provide **clear and shared** goals for public safety.
2. Enhanced communication to reduce the risk of harm, to share information, to pool and maximise information for risk management and effective service user led care. One important development for the effective collation, sharing and storage of information is to make increasing use of information technology. To this end a computerised RAMAS form has been developed and will run on 32-bit windows NT systems. To date the system is in prototype form for stand alone use.

The next stage is to develop a networked version to maximise interagency use.

(Surrey Probation Service are currently examining its possible integration into their I.T. systems.

3. Shared Training: Involving staff of all disciplines, across all agencies to strengthen the shared agenda, local expertise and develop clear pathways of care.
4. Enhanced Good Practice through
 - Improved information exchange about risk in the local area
 - Improvements in overall risk assessment and management of those presenting a risk of public harm, not just more comprehensive information but also making assessments more systematic, clear and communicable
 - Increased objectivity and clarity and effective decision support with regard to risk
 - Increased opportunities for early intervention, harm reduction and reduction of offending or people with alcohol, drug and mental health problems.

- Increased confidence and trust between agencies.

Using RAMAS across agencies is an effective way to build up close relationships and networks at the practice level.

RAMAS is not intended to be a stand alone process, it is part of and integral to good practice. It is designed to assist clinicians and practitioners work smarter not harder. RAMAS Risk Management is the same as good case management.

If the system is to continue to progress, the information communication, monitoring and co-ordinating arrangements must continue to be appealing to and supportive of service users, carers and staff. The approach must also have a measurable impact on the quality of patient care and public safety and meet the needs of patients better than the present patchy provision.

We are delighted with the Department of Health and Home Office's continued interest and support for this work.

It is intended that next years funding will be used to strengthen the following aspects:

- Integration with the new CPA
- Safeguards for patients / impact on quality of care
- Local expertise in the approach / Training & Support
- Interagency collaboration for Public Safety
- Work firmly grounded in evidence from research.

The Risk Management Project Team welcomes comments / review of this Report.

Project Leader Dr. Margaret O'Rourke

Annexe A

Publications from this Research

1. O'Rourke, M. Hammond, S. Davies, E. (1997)
"Risk Assessment and Risk Management
Psychiatric Care. 4 (3)
2. O'Rourke, M. Hammond, S. Smith, S. & Davies, E. (1998/99)
RAMAS: Risk Assessment, Management and Audit
Professional Manual
3. Hammond, S. & O'Rourke, M. (1999)
The Psychometric Development of RAMAS
Published by Surrey Hampshire Borders NHS Trust
ISBN
4. O'Rourke, M. (1999)
"Dangerousness" how best to manage the risk"
The Therapist, Vol. 6. No. 2 Spring 1999
5. O'Rourke, M. (1999)
RAMAS: The Partnership Approach to Risk
Crisispoint No. 9. March 1999. The Mental Health Foundation
6. O'Rourke, M. & Titley, K. (1999)
Towards Safe, Sound, Supportive Service:
Staff training and support
A Report on Interagency Risk Management Training.
FCPU Paper
7. O'Rourke, M. Smith, S. McGeachy, O. (1999)
Public Safety: The Challenge Confronted
A Report on the first 18 months of BLIP
a multi-agency project designed to manage risk
ISBN 1-903165-01-8
8. O'Rourke, M. Titley, K. (2000)
"Community Safety, Risk Prevention and Individual Care"
A Report on Inter-agency Risk Management Training
in the States of Jersey
9. O'Rourke, M. (2000)
"Public Safety and Individual Care: Community Risk Management
with "Severe" Personality Disorder
Invited Workshop International Conference on Psychological
Solutions to Personality Disorder, Leeds, published on
Liverpool University Website <http://www.liv.ac.uk/clinpsy/>
Click on "Forensic Links"
10. O'Rourke, M. (2000)
"Towards Fail-safe Risk Management"

Invited paper presented at International Conference on Psychological Solutions to Personality Disorder published on conference website, Liverpool University
<http://www.liv.ac.uk/clinpsy/>
Click on "Forensic Links"

11. Hammond, S. (2000)
"Idiographic Techniques for Assessing Personality Disorder"
Invited paper to International Conference on Psychological Solutions to Personality Disorder published on conference website, Liverpool University
<http://www.liv.ac.uk/clinpsy/>
Click on "Forensic Links"
12. Hammond, S. & O'Rourke, M. (2000)
"Developing a Psychometric Model for a Risk Assessment: the case of the RAMAS"
European Journal of Psychological Measurement
(In press)
13. O'Rourke, M. & Heath, B. (2000)
RAMAS works with Jersey
Poster Display at International Conference on Celebrating Excellence in Probation, London. January 2000.
14. O'Rourke, M. & Bird, L. (2000)
Book: Working Title "Risk and Wellbeing: the importance of communication and trust"
A partnership project with the Mental Health Foundation
(In preparation)
15. Smith, S. (1999)
"Fail-safe Services"
Paper presented to Home Office Conference 1999
16. Smith, S. (2000)
"Achieving multi-disciplinary work"
Paper presented to Invited Workshop International Conference on Psychological Solutions to Personality Disorder, Leeds.
17. RAMAS Factsheet No. 1
Interagency ° RAMAS 1999

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