

Risk Matrix 2000

- sex
- violence

Actuarial risk assessment

- rules
- objective data
- unbiased
- deductive
- quantifiable: defines low, medium, high

How well they work

“Clinical”	$r = 0.10$	just better than chance
Sex precons	$r = 0.19$	2x better than “clinical”
Clinical + Research	$r = 0.20 - 0.25$	
Scales	$r = 0.25 - 0.45$ (ROC areas ~ 0.75)	

Risk Matrix 2000 - Sex

STEP ONE

1. Age
2. Sexual sentencing appearances
3. Criminal sentencing appearances

AGGRAVATING FACTORS

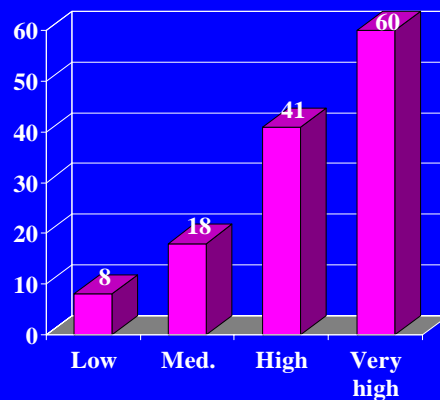
- male victim
- non-contact sex offence
- stranger victim
- never ‘married’

RM 2000 (sex) - Results

(15-20 year follow-up of 429 released prisoners)

Low risk : 7 of 87 (8%
(7%)
Medium risk : 30 of 166 (18%)
High risk : 49 of 121 (41%
(36%)
Very high risk : 33 of 55 (60%)

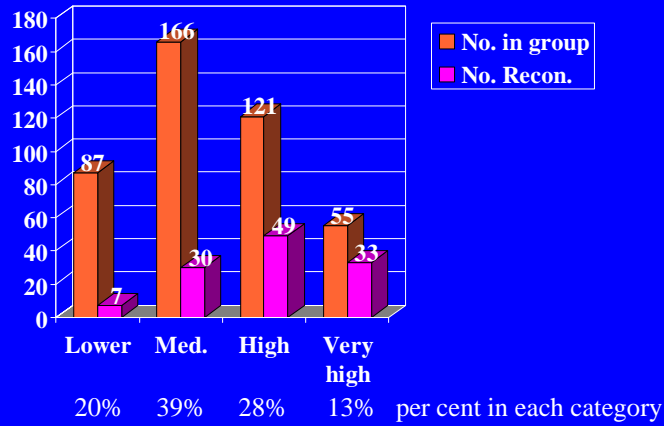
RM2000 (sex)



or?
7%
19%
36%
59%

*Per cent reconviction for each risk group
15 year follow up*

RM 2000 (sex) - results



Risk Matrix 2000 (violence)

	points		points
Age		Any burglaries?	
18 to 24 (<i>vio.</i> 20+)	3	No	0
25 to 34	2	Yes	2
35 to 44	1		
>44	0		
		TOTAL POINTS	CAT.
Violent appearances		0,1	Low
none	0	2,3	Med.
1	1	4,5	High
2,3	2	6+	V. high
4+	3		

RM 2000 (violence) - Results

(20 year follow-up of 449 released prisoners)

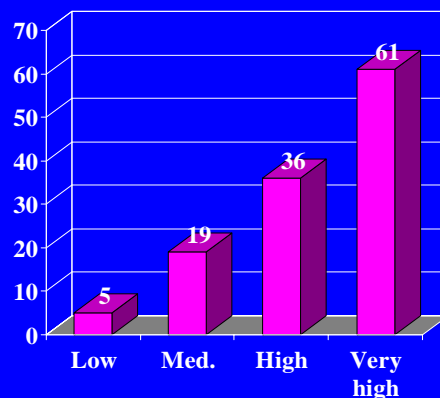
Low risk : 8 of 159 (5%)

Medium risk : 30 of 158 (19%)

High risk : 26 of 73 (36%)

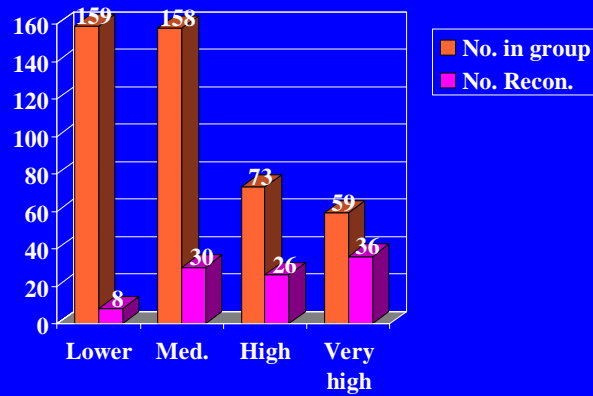
Very high risk : 36 of 59 (61%)

RM2000 (violence)



*Per cent reconviction for each risk group
15 year follow up*

RM 2000 (violence) - results



Predictive Accuracy

Risk Matrix Sex

AUC = 0.77 (2 year follow up)

AUC = 0.75 (long term follow up)

Risk Matrix Violence

AUC = 0.78 Long term follow up

AUC = 0.80 Long term follow up

Moderate predictive accuracy

Risk Matrix validation

England prison releases

1979: 15-20 year follow-up; n=429

1980: 4 year follow-up; n=311

'early 1990's': 2 year follow-up; n=647

No information on:

- missing cases (representative sample)
- confidence intervals (distinct categories?)
- comparison of risk categories between studies
- peer review (one limited report)

Risk Matrix Validation

- small study populations
- selective samples
- lack of published data
- distinct categories?
- meaning of categories?
- similarity of performance in different populations?
- % reconviction? (base rate problems)

Other studies

Craig et al, (2007): n=85
Craissati and Beech (2004): n=235, but 9 reconvictions
Knight and Thornton (2007): high risk sample, 1959-84

Risk Matrix Scotland

- all sex offenders released between 1996-2001
- minimum follow-up 5 years

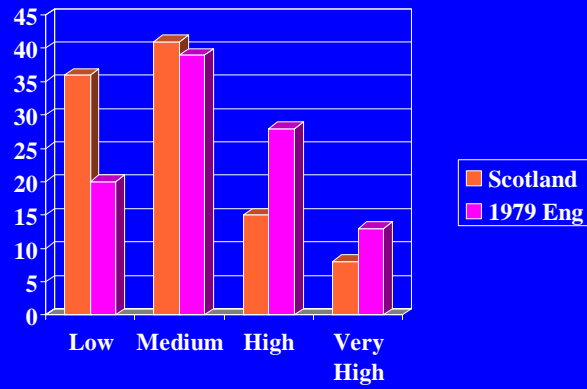
Risk Matrix Sex

771 of 1029 (75%) subjects scored + follow-up

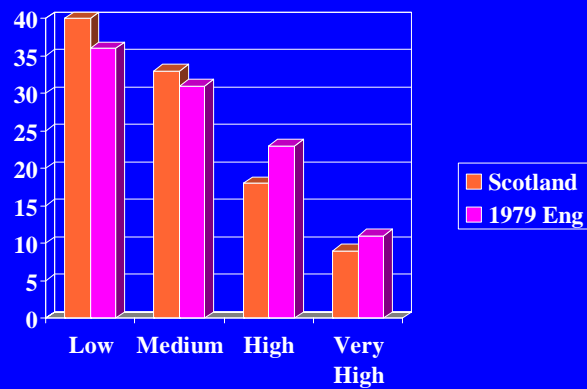
Risk Matrix Violence

974 of 1029 (95%) subjects scored + follow-up

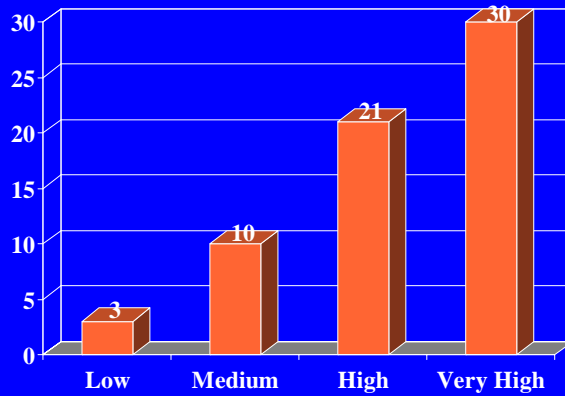
Risk Matrix (S) Scotland results % in each category



Risk Matrix (V) Scotland results % in each category



Risk Matrix (S) Scotland results Reconviction (11% at 5 years)

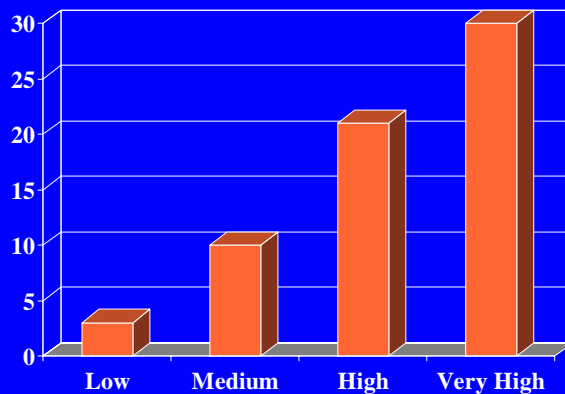


Likelihood ratio

Low	0.24
Medium	0.91
High	2.25
V. High	3.58

% reconviction (5 year) in each risk category
 (overlap in confidence intervals between high and vh only)

Risk Matrix (S) Scotland results



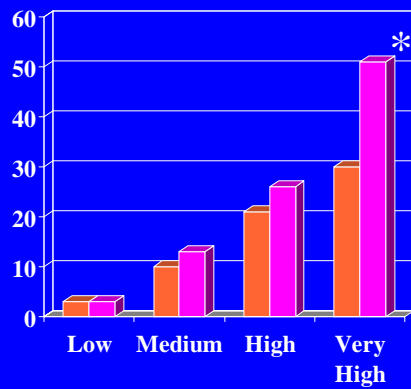
Odds ratios

Med - Low	3.7
High - Med	2.9
VH - High	1.6

VH and H apparent by
 1 year

% reconviction (5 year) in each risk category

Reconvictions: RM (S) Scotland v RM (S) England



Odds ratios similar
LR's differ for high risk
nearly differ for med.

Scotland 5 year reconviction = 11%
England 5 year reconviction = 20%

Predictive Accuracy for the S-Scale

England & Wales 2 year: AUC = 0.77

England & Wales 15 year: AUC = 0.75

Scotland 5 year: AUC = 0.73

Moderate predictive accuracy

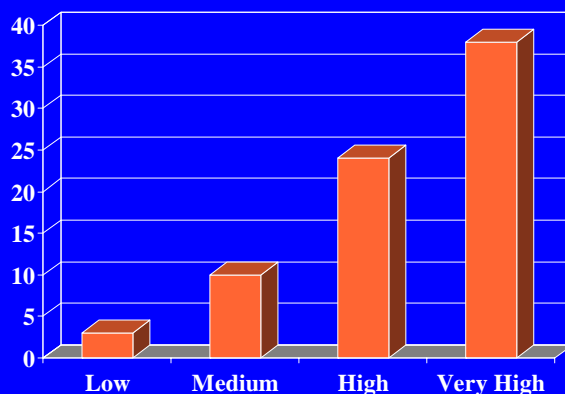
Risk Matrix (S) Seriousness of reconviction

3+ year custodial sentence:

Low	36%
Medium	30%
High	13%
V. High	13%

Low + Medium significantly higher proportion
than High + Very High

Risk Matrix (V) Scotland results Reconviction (12% at 5 years)

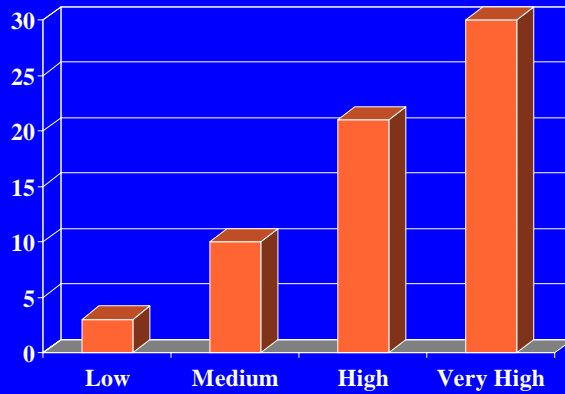


Likelihood ratio

Low	0.23
Medium	0.81
High	2.23
V. High	4.43

% reconviction (5 year) in each risk category
(no overlap in confidence intervals)

Risk Matrix (V) Scotland results



Odds ratios

Med - Low 3.6

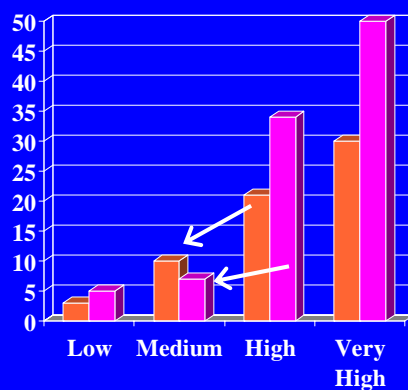
High - Med 2.7

VH - High 2.0

H and M apparent by
1 year

% reconviction (5 year) in each risk category

Reconvictions: RM (V) Scotland v RM (V) England



Odds ratios differ (high-med)
 LR's differ for medium

Scotland 5 year reconviction = 11%
 England 10 year reconviction = 19%

Predictive Accuracy for the V Scale

England & Wales 10 year: AUC = 0.78

England & Wales 15 year: AUC = 0.80 (.76?)

Scotland 5 year: AUC = 0.76

Moderate predictive accuracy

Risk Matrix (V) Seriousness of reconviction

15 received sentences of > 1 year

5 Life sentences: 4 in medium risk offenders
1 in a low risk offender

Risk Matrix Summary for Scotland

Reconviction Risk

	<u>RM (S)</u>	<u>RM (V)</u>
Low	< 5%	5%
Med	10% (4x low)	10% (3.5x low)
High	20-25% (2.5x med)	25% (3x med)
VH	33% (1.5x high)	40% (2x high)

STABLE – 2007 5 sections (13 Items)

- Significant Social Influences
- Intimacy Deficits
- General Self-regulation
- Sexual Self-regulation
- Co-operation with Supervision

ACUTE PREDICTORS – Two Factors

Sex/Violence Score (Sum of four factors)	Score	General Recidivism Score (Sum of all seven factors)	Score
• Victim Access		→ → Copy Score Over → → →	
• Hostility		→ → Copy Score Over → → →	
• Sexual Pre-occupation		→ → Copy Score Over → → →	
• Rejection of Supervision		→ → Copy Score Over → → →	
		• Emotional Collapse	
		• Collapse of Social Supports	
		• Substance Abuse	
Sex/Violence Total		General Recidivism Total	31

Relative ACUTE Priority

Risk Ratios: Relative Risk for Recidivism within 45 days based upon combined STATIC-99, STABLE-2007 & ACUTE-2007 Scores

Priority	Low	Moderate	High
Sexual Crimes	1.0	2.4	14.9
Any Sexual	1.0	2.3	4.6
Violent or Sexual	1.0	1.8	7.0
Any Crime	1.0	1.9	4.5
Any, Including breaches	1.0	1.6	4.3

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Risk Matrix and Static 99

