

2024 EVALUATOR GUIDE FOR RISK MATRIX 2000 S & V Scales

International Version¹

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¹ The International Version is intended primarily for professionals working outside England and Wales. Professionals working in England and Wales may wish to use the NOMS approved version.

HOW TO USE THIS WORKBOOK

The first time you use this workbook you should read it from beginning to end. The body of the text describes the relevant research underlying Risk Matrix 2000 and the basis for different ways of using it. Thereafter, while you may wish to refer back to the body of the workbook from time to time, the resources you will refer to regularly in using Risk Matrix 2000 are all in the Appendices at the end.

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Acknowledgements

- Notable contributors to the development of RM2000

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Introduction

Risk Matrix 2000 (RM2000) is a statistically-derived risk classification process intended for males aged at least 18 who have been convicted of a sexual offense. At least one of these sexual offenses should have been committed when the perpetrator was aged 17 or older. It uses simple factual information about individuals' past history to divide them into categories that differ substantially in their rates of reconviction for sexual or other violent offenses. Risk Matrix was originally developed for use in England and Wales and some of the original scoring rules were tailored to specific features of criminal justice system prevailing in England and Wales. Research has since shown that it is applicable in other jurisdictions. In this International Version some details of the Scoring Guide are different from the version intended for use in England and Wales: guidance relating to jurisdiction-specific laws has been removed. Furthermore, the 2024 version of the Evaluator Guide describes important developments in how the scale can be used.

RM2000/S is a prediction scale for sexual reoffending. RM2000/V is a prediction scale for non-sexual violence (NSV) engaged in by individuals who have been convicted for a sexual offense. The purpose of Risk Matrix 2000 is to allow individuals who have been convicted for sexual offenses to be divided into broad risk groups that reliably differ in their relative rate of known sexual (S-scale) or non-sexual violent (V-scale) recidivism.

RM2000 is not intended for use in making decisions about family re-integration where the task is to distinguish at very low levels of risk, and to consider risk that may be very situation specific. It is sensibly used to distinguish a group of individuals who collectively present a relatively higher risk to the community from among the broad range of individuals serving community or prison sentences.

It is important to recognize that RM2000 does not capture all influences on sexual and violent re-offending and consequently the risk presented by individuals within a category will vary depending on how these other influences apply to the specific individual. Some of these other influences are known and a more comprehensive assessment can combine RM2000 with assessments of other known risk factors to better approximate the risk presented by the individual.

This evaluator guide summarizes the research on which RM2000 is based and provides guidance on how evaluators can use the resulting risk classifications in carrying out assessments or forming recommendations. It should be read in conjunction with the scoring guide which describes how to score the instrument and also reports information on its inter-rater reliability.

Predictive Value of Risk Matrix 2000

The ability of the RM2000 scales to create groups that are ordered in terms of their relative risk of recidivism has been tested in a number of studies. Results of these studies are most usefully summarized through meta-analyses. There have been two major meta-analyses examining this carried out independently of the research team that originated

RM2000. Meta-analyses combine indices of predictive accuracy in order to more accurately represent the typical pattern of results. The two indices of predictive accuracy that are commonly used are the ROC Area under the Curve (AUC) statistic and the effect size statistic, Cohen's *d*.

The ROC AUC coefficient can be interpreted as the proportion of randomly chosen Recidivist/Non-recidivist pairs in which the recidivist would score higher on the risk scale. This index runs from 0.5 (meaning no predictive value) to 1.0 (meaning perfect predictive value). Coefficients of .64 to .70 are generally considered moderate predictive accuracy, and .71 and above as high accuracy.

A recognized alternative to the ROC AUC is the *d* statistic. This expresses the difference between the mean score on the prediction scale of recidivists and non-recidivists in standard deviation units. Typically, Cohen's *d* values of .50 and .80 are considered moderate and large effects, respectively.

Hanson and Morton-Bourgon (2009) meta-analyzed prediction studies with RM2000 available at that time.

Table 1 shows the relative predictive accuracy of different scales according to this meta-analysis. It is clear from this table that RM2000S's predictive accuracy is comparable to that of other actuarial instruments.

It should be noted that most of the RM2000 studies in this meta-analysis are with UK samples while the majority of the studies with other instruments are from other jurisdictions.

Good support was found for the RM2000 in this meta-analysis.

The results indicate that the predictive accuracy of RM2000S is comparable to that of other actuarial instruments.

Table 1: Average Predictive Accuracy of Actuarial Instruments (Sexual Recidivism)

Prediction Instrument	<i>d</i> (95% CI)	N (k)
Static-99	.67 (.62-.72)	20,010 (63)
RRASOR	.60 (.54-.65)	11,031 (34)
Risk Matrix 2000S	.67 (.56-.77)	2,755 (10)
Static-2002	.70 (.59-.81)	2,290 (5)
MnSOST-R	.76 (.65-.87)	4,672 (12)

A later and more complete meta-analysis was carried out by Helmus, Babchishin, & Hanson (2013). Results for the S and V scales are summarized in Table 2. The table shows average *d* and related statistics for the outcome the scale was designed to predict. These statistics continue to compare well with the corresponding statistics from Table 1 for other scales. Note that the outcome being predicted was sexual recidivism for the S-scale and non-sexual violent recidivism for the V-scale.

Table 2: Average Predictive Accuracy of RM2000 Scales

Scale	Mean <i>d</i>	CI	Q	I ²	N (k)
S-scale	0.740	0.667 – 0.812	16.19	13.55	10,644 (15)
V-scale	1.017	0.954 – 1.080	55.15	83.68	9,836 (10)

Helmus et al also carried out moderator analyses designed to determine whether a range of study features modified the average predictive accuracy of the scales. These showed that there were no differences between published and unpublished studies but that prediction was lower in samples that had been pre-selected for risk while prediction was greater in studies from the United Kingdom (a result that has also been found for Static-99).

Overall, these data on predictive accuracy may be summarized by saying that the RM2000 scales show moderate to large predictive accuracy, consistent with results obtained by other similar prediction scales.

Labelling Categories

Risk Matrix 2000 places individuals into four risk categories: Below Average, Average, Above Average, and Well Above Average. These were developed by Lehmann, Thornton, Helmus, & Hanson (2016) to correspond to the more generally used standardized risk levels that are used with other similar scales. They replace the original labels created when the scale was developed.

Although these categories have statistical meanings, they also have implications for risk management practice. Table 3 shows the suggested implications for action. It is important to recognize that applying labels of this kind represents a value judgment that is relative to a practical purpose. The actions taken by organizations are constrained by the resources available to them. For a system with more limited resources it would be perfectly reasonable to only provide specialized risk management services to those falling in the Above Average and Well Above Average categories while simply applying more general correctional practice that did not attend specifically to concerns regarding sexual offending to those in the Below Average and Average categories.

Table 3: Risk Category Labels for the S & V Scales

Risk Category Label	Priority Implications
Below Average	Lower intensity management except take particular care regarding the possibility of further offending against past victims
Average	Normal management for individuals convicted of sexual offenses
Above Average	More intensive management
Well Above Average	Much more intensive management

Norms for the Risk Matrix 2000 Scales

Lehmann et al. (2016) carried out a project to develop international norms for Risk Matrix 2000. The normative data in this section and the recidivism data in a subsequent section are drawn from the results obtained in that project.

The samples in that project comprise 974 men sentenced for a sex offense and released from Scottish prisons between 1996 and 2001, 710 men sentenced for a sex offense and placed under community supervision (probation or parole) in Canada who were released between 2001 and 2005, 936 men sentenced for a sex offense reported to the Berlin state police who were released between 1994 and 2009, and 524 men sentenced for a sex offense and released from prisons in England and Wales in 1979. In none of these cases were these samples selected for risk, or for needing treatment, so they are reasonably considered representative for the times and places from which they were drawn. It should be noted that while three of the samples were modern (at risk during the late 1990s and early 2000s), one relates to individuals who were at risk during the early 1980s. The “old” sample constitutes less than a fifth of the whole and analyses excluding it have shown that its inclusion does not materially alter any of the relevant statistics.

Table 4 shows the percentage of men sentenced for a sex offense from the International Norms project that fall in the different S and V risk categories.

Table 4: Percentage Falling in RM2000 S & V Risk Categories

Risk Category	S-Scale	V-Scale
Below Average	30%	42%
Average	43%	38%
Above Average	20%	15%
Well Above Average	7%	5%

Proportions falling in the different risk categories may vary from one jurisdiction to another, over time within jurisdictions, and between groups selected for different institutions or services, so, although the above table makes a useful reference point,

professionals using RM2000 may wish to establish norms for the particular context in which they work.

Expected five-year recidivism rates estimated from the International Norms project are shown in following tables. The underlying data set has an N of 3,144 for analyses of sexual recidivism and 3,131 for analyses of non-sexual violent recidivism (Lehmann et al., 2016).

Estimates were derived through fitting logistic regression equations predicting recidivism from risk category in each sample and then integrating them through meta-analysis. The Q-statistic was used to test for variation in results beyond that to be expected on the basis of sampling error. Results from the fixed effect model are reported here as random effects models need many more samples before they give stable estimates.

Sexual recidivism estimates are shown in Table 5. Estimates were very consistent across the four samples. The Q statistic suggested no meaningful variation. This is notable because the samples were quite diverse (three were modern but one was from 1979) and were from four different jurisdictions and the earlier sample had a materially higher proportion of individuals in the higher risk categories and a higher sexual recidivism base rate.

Table 5: Five-Year Expected Sexual Recidivism Rates

Risk Matrix 2000S Risk Categories	Predicted Recidivism (95% CI)
Below Average	4.4 (3.5 – 5.4)
Average	10.0 (8.9 – 11.3)
Above Average	21.4 (19.3 – 23.8)
Well Above Average	40.0 (34.8 – 45.4)

Table 6 shows the corresponding rates of Non-Sexual Violent Recidivism broken down by V-scale categories.

Table 6: Five-Year Expected Non-Sexual Violence Recidivism Rates

Risk Matrix 2000V Risk Categories	Predicted Recidivism (CI)
Below Average	6.4 (5.3 – 7.6)
Average	14.7 (13.3 – 16.2)
Above Average	30.2 (27.4 – 33.2)
Well Above Average	52.2 (46.4 – 58.1)

A limitation of these tables is that only about half of the sexual recidivism that eventually occurs happens in the first five years after release. Thornton, Hanson, Kelley, and Mundt (2021) developed a method for projecting known short-term sexual recidivism rates to lifetime rates. The latter are derived from 20-year recidivism estimates as that the number of sexual recidivists after 20 years is sufficiently low to be indistinguishable from zero. Table 7 shows the results of projecting the sexual recidivism rates from Table 5 out to 20

years. The method is only applicable to sexual recidivism so no corresponding estimates for non-sexual violence could be calculated.

Table 7: Projected Twenty-Year Sexual Recidivism Rates

Risk Matrix 2000S Risk Categories	Predicted Recidivism (95% CI)
Below Average	8.4%
Average	18.5%
Above Average	37.5%
Well Above Average	63.4%

Lifetime rates have two advantages. First, they better capture the totality of the risk presented by someone. Second, they will be less effected by undetected sexual recidivism, at least for persistent recidivists. While the detection rate for a single sex offense is quite low, recidivists who continued reoffending will have offended enough times over a long follow up that most of them will eventually have been caught.

The reader is cautioned that there are many influences on recidivism rates and the rate to be expected for a given risk category represents not only the properties of that risk category but also the average of the totality of other influences operating in the times and places that the underlying recidivism data were gathered. At least three other kinds of influence are important to consider:

- The average level of psychological risk factors that accompany the risk category. Depending on how samples are selected these average levels may be higher or lower than prevailed in the samples on which these norms are based.
- The average level of internal protective factors (for example, ability to regulate psychological risk factors) that accompany the risk category. These average levels may be higher or lower than prevailed in the samples on which these norms are based. For example, for someone who had successfully participated in treatment might be expected to have developed higher levels of internal protective factors.
- The average level of external protective factors (for example, intensity and duration of supervision and support) that accompany the risk category. These average levels may be higher or lower than prevailed in the samples on which these norms are based.

A striking example of the effect of external protective factors was documented by Minnesota Department of Corrections (2007). In 1990, men sentenced for a sex offense and released from Minnesota DOC were supervised for an average of 13 months but by 2002 the average length of supervision was 63 months. Similarly, prior to 1997 very few men sentenced for a sex offense were released to intensive supervision but by 2005 over half of Minnesota DOC men sentenced for a sex offense were released to intensive supervision (Minnesota DOC, 2007). One effect of intensive supervision was that a majority of men sentenced for a sex offense released in later years were revoked for technical violations. Accompanying this change in external protective factors, the three-year sexual recidivism rate fell to about a quarter of what it had been.

Since the absolute recidivism rates associated with risk categories can be expected to vary depending on these factors it is useful to express the risk associated with a risk category relative to the risk category in which typical men sentenced for a sex offense fall (the Average risk category). Table 8 shows risk ratios defined as Hazard Ratios for the Risk Matrix.

Table 8: Risk Ratios for Recidivism by Risk Category

Risk Category	Sexual Recidivism by S-Scale	NSV Recidivism by V-Scale
Below Average	0.48	0.46
Average	1.00	1.00
Above Average	2.10	2.16
Well Above Average	4.40	4.64

These risk ratio statistics might be expressed in words as follows. The Below Average category represents half the risk that the Average Risk category represents while the Above Average category represents twice the risk that the Average Risk category represents and the Well Above Average Category represents four times the risk that the Average Risk category represents.

Effect of Age and Time Offense-Free on Risk

Early research into the relationship between age at release and sexual recidivism generally used samples in which the average age was in the mid-30s reflecting the age distribution of men sentenced for a sex offense who were released from prison in earlier eras. Changes in sentencing practice have now meant that more such individuals are being released in their fifties and sixties. A robust finding (Helmus, Thornton, Hanson, & Babchishin, 2012) has emerged that men sentenced for a sex offense released in their 60s and 70s tend to have a particularly low sexual recidivism rate. A supplementary Cox Regression analysis of the International Norms data set showed that this effect applied in these samples too, even after controlling for the effect of Risk Matrix category. The magnitude of the “60+ effect” was equivalent to the average effect of one risk category meaning that the expected sexual recidivism rate for this older group could be better approximated by moving them down one risk category.

It is therefore recommended that if someone is aged 60+ their risk category should be put down one level (except if they are already in the Below Average category).

Recent research has also found that the amount of time an individual spends in the community offense-free (i.e. without sexually offending again), affects risk. Hanson, Harris, Helmus & Thornton (2014), using data from diverse populations and with large sample sizes, indicate that the longer people go without offending in the community, the less likely they are to be reconvicted for a sexual offense. According to this research, risk

of sexual reconviction approximately halves for every five years men sentenced for a sex offense are in the community (sexual) offense-free.

Helpfully, this halving of risk corresponds to a reduction of one risk category. On this basis it is recommended that if men sentenced for a sex offense are (sexual) ‘offense-free’ for 5 years after their sentence date (if given a community sentence) or the date of release from prison (if given a custodial sentence) then their risk level can be reduced by one level. If such an individual is ‘offense-free’ for an additional further 5 years after this, then their risk level can be reduced by one further level, and so on. Once they are low static risk, their risk level cannot be reduced any further.

This reduction in risk category should not take place if information is available indicating that the individual may actually have committed further sexual offenses during the five years “offense-free” (for example, plausible allegations that have not been proved in court but which are not rebutted by available evidence), or if there is evidence of them having engaged in seriously concerning behaviors (for example, victim access behaviors).

The term ‘sex offense-free’ refers to a period during which there was no known criminal activity taking place, no convictions, no warnings or reprimands, and no breaches for sexual offenses. The term ‘in the community’ would not include mental health institutes or hospitals, or any residence which has onsite professional staff supervising it and the individuals placed there.

It is recommended that this should currently not apply to those who have been convicted of historic offenses. That is, the period ‘offense-free’ should not be counted from the date the offense took place (even if this was a significant number of years ago), but from the date the person is in the community after being sentenced for this offense. Further research is required on this group to determine whether some appropriate time free adjustments can be identified.

General Guidance in Describing Risk Matrix 2000 Risk Categories

It is widely accepted that actuarial tools are a reliable and predictive form of risk assessment (e.g. Bonta, Law & Hanson, 1996). Research confirms that actuarial risk assessments, such as RM2000, are generally performing better than unstructured professional judgement (Hanson & Morton-Bourgon, 2009). Recognition of this has led to actuarial risk assessment tools being commonly used by professionals in the criminal justice system who deal with men sentenced for a sex offense. RM2000 is primarily used to direct resources to groups of individuals who on average present a higher risk and who therefore, according to a wealth of What Works literature, are more likely to gain from and require more treatment resources.

As indicated earlier, the RM2000 risk categories can usefully be thought of as ordered along the risk continuum. The higher categories identify groups of men at a relatively higher risk of being reconvicted for sexual offenses (S-scale) or non-sexual violence (V-scale) and to whom relatively more risk management resources should be applied.

Risk ratios are the index of risk that most accurately and stably captures what RM2000 measures. If there is a need to estimate absolute recidivism rates under locally prevailing release environments then ideally a local recidivism study should be carried out directly examining rates associated with RM2000 categories. If this is not possible then the assessor should compare the release environment that prevailed for the samples composing the International Norms to the environment to which the offender being assessed is expected to be released and make a professional judgment as to how much protection the services likely to apply to this offender would confer. It should be noted that the rates observed for the International Norms samples were obtained in jurisdictions where supervision would typically have been relatively short, revocation rates would not have been high, and polygraph-assisted monitoring was not in force.

Risk ratios (Table 8) naturally emphasize the kind of information needed for applying the RNR Risk Principle for the effective application of treatment or supervision resources. This is the most important application of RM2000.

Combining Risk Matrix 2000 with STABLE-2007

Where practical, RM2000 should be used as one part of a more comprehensive assessment process. Relevant additional factors include the density of long-term psychological risk factors manifested by the individual (see Thornton & Knight, 2013 and Helmus et al., 2015), the degree to which dynamic internal protective factors have been developed, and the degree to which the release environment will provide external protective factors from which the individual is liable to benefit.

The 2017 revision of the STABLE-2007 Evaluator Workbook provided an integration table for combining Risk Matrix 2000 categories with scores on the STABLE-2007. Scores on STABLE-2007 express a compromise between the long-term vulnerabilities expressed in the individual's history and the current expression of these dynamic risk factors. STABLE ratings can potentially refine risk assessment, allow treatment targets to be identified, and assess reduction in risk due to progress in treatment. Unfortunately, the integration table provided in the 2017 workbook has a number of limitations.

To begin with, it still uses the original labels as opposed to the updated ones presented above. This is liable to be confusing for a modern user. A second limitation is it that assigns people to "Nominal Risk Levels" which do not correspond to the generally accepted standardized risk levels. A third problem is that since the nominal risk level assigned changes abruptly at specific STABLE-2007 scores, so does the level of risk assigned: this means that sometimes a difference of one point in the STABLE score assigned can lead to a change in the nominal risk level while, at other times, someone can make a large amount of progress in treatment leading to a substantially reduced STABLE-2007 score without it changing their nominal risk level.

Thornton, Helmus, and Fernandez (2023) introduced an improved method for combining STABLE-2007 with Risk Matrix 2000. This is based on a logistic regression equation predicting three-year sexual recidivism estimated from two samples with a combined N

of 2,842 of whom 148 were sexual recidivists. One sample was the Dynamic Supervision Project sample (Hanson et al., 2015) which had formed the basis for the earlier integration table. This has the advantage of being a national Canadian sample for which exceptional care had been taken when collecting sexual recidivism data. This included, for example, having national data on recidivism and examining apparently non-sexual violent recidivism to see if the underlying behavior involved a sexual offense. The other is a sample of those under supervision in the Canadian province of British Columbia (Helmsu et al., 2021) for which sexual recidivism was less well measured, being based solely on new charges for sexual recidivism from within the province.

Table 9: Logistic Regression Equations Predicting Three-Year Sexual Recidivism

Predictor	B	SE	Wald	df	p
Model 1					
RMS	.680	.104	42.72	1	<.001
Stable-2007	.063	.017	13.58	1	<.001
Constant	-4.264	.194	483.62	1	<.001
Model 2					
RMS	.678	.105	41.88	1	<.001
Stable-2007	.064	.017	13.88	1	<.001
BC Data (vs DSP)	-.840	.186	20.47	1	<.001
Constant	-3.651	.228	257.18	1	<.001

Sexual recidivism estimates for different combinations of Risk Matrix 2000 and STABLE-2007 were then calculated by solving the logistic regression equation. Importantly, the equation was solved using the sexual recidivism base rate from the Dynamic Supervision Project so that they corresponded to more complete sexual recidivism data.

Margins of error for the sexual recidivism estimates were calculated by using the confidence interval for the incremental b coefficient for STABLE-2007. Table 10 shows the point estimate of sexual recidivism at 3 years, followed by the estimate obtained when the equation is solved using the lower bound for this coefficient, followed by the estimate obtained when the equation is solved using the upper bound for this coefficient. The readers should note that these margins of error reflect one source of error(i.e., how accurately the incremental contribution of STABLE-2007 to prediction is estimated) but there are other potential sources of error such as how accurately the base rate is estimated.

Table 10: Integrating RM2000/S with STABLE-2007 for Three-Year Sexual Recidivism

STABLE Score	RM2000/S Below Average	RM2000/S Average	RM2000/S Above Average	RM2000/S Well Above Average
0	2.5% (2.5%, 2.5%)	4.9% (4.9%, 4.9%)	9.2% (9.2%, 9.2%)	16.6% (16.6%, 16.6%)
1	2.7% (2.6%, 2.8%)	5.2% (5.0%, 5.3%)	9.7% (9.4%, 10.0%)	17.5% (17.0%, 17.9%)
2	2.9% (2.7%, 3.1%)	5.5% (5.2%, 5.8%)	10.3% (9.7%, 10.9%)	18.4% (17.4%, 19.4%)
3	3.1% (2.8%, 3.4%)	5.8% (5.3%, 6.4%)	10.9% (10.0%, 11.9%)	19.4% (17.9%, 21.0%)
4	3.2% (2.9%, 3.7%)	6.2% (5.5%, 7.0%)	11.5% (10.2%, 12.9%)	20.4% (18.3%, 22.6%)
5	3.5% (2.9%, 4.0%)	6.6% (5.6%, 7.7%)	12.2% (10.5%, 14.1%)	21.5% (18.8%, 24.4%)
6	3.7% (3.0%, 4.4%)	7.0% (5.8%, 8.4%)	12.9% (10.8%, 15.3%)	22.6% (19.3%, 26.2%)
7	3.9% (3.1%, 4.9%)	7.4% (6.0%, 9.2%)	13.6% (11.1%, 16.6%)	23.7% (19.8%, 28.1%)
8	4.1% (3.2%, 5.3%)	7.9% (6.2%, 10.0%)	14.4% (11.4%, 18.0%)	24.9% (20.3%, 30.1%)
9	4.4% (3.3%, 5.9%)	8.3% (6.3%, 10.9%)	15.2% (11.8%, 19.4%)	26.1% (20.8%, 32.2%)
10	4.7% (3.4%, 6.4%)	8.8% (6.5%, 11.9%)	16.0% (12.1%, 21.0%)	27.3% (21.3%, 34.4%)
11	5.0% (3.5%, 7.0%)	9.4% (6.7%, 12.9%)	16.9% (12.4%, 22.7%)	28.6% (21.8%, 36.6%)
12	5.3% (3.6%, 7.7%)	9.9% (6.9%, 14.1%)	17.8% (12.8%, 24.4%)	30.0% (22.4%, 38.9%)
13	5.6% (3.7%, 8.4%)	10.5% (7.1%, 15.3%)	18.8% (13.1%, 26.2%)	31.3% (22.9%, 41.2%)
14	6.0% (3.9%, 9.2%)	11.1% (7.3%, 16.6%)	19.8% (13.5%, 28.2%)	32.7% (23.5%, 43.6%)
15	6.4% (4.0%, 10.0%)	11.8% (7.5%, 18.0%)	20.8% (13.8%, 30.2%)	34.1% (24.0%, 46.0%)
16	6.7% (4.1%, 10.9%)	12.5% (7.7%, 19.5%)	21.9% (14.2%, 32.2%)	35.6% (24.6%, 48.4%)
17	7.2% (4.2%, 11.9%)	13.2% (8.0%, 21.0%)	23.0% (14.6%, 34.4%)	37.1% (25.2%, 50.8%)
18	7.6% (4.3%, 13.0%)	13.9% (8.2%, 22.7%)	24.2% (15.0%, 36.6%)	38.6% (25.8%, 53.2%)

19	8.1% (4.5%, 14.1%)	14.7% (8.4%, 24.4%)	25.4% (15.4%, 38.9%)	40.1% (26.3%, 55.6%)
20	8.5% (4.6%, 15.3%)	15.5% (8.7%, 26.3%)	26.6% (15.8%, 41.2%)	41.7% (27.0%, 58.0%)
21	9.1% (4.7%, 16.6%)	16.4% (8.9%, 28.2%)	27.9% (16.2%, 43.6%)	43.2% (27.6%, 60.3%)
22	9.6% (4.9%, 18.0%)	17.3% (9.2%, 30.2%)	29.2% (16.6%, 46.0%)	44.8% (28.2%, 62.6%)
23	10.2% (5.0%, 19.5%)	18.2% (9.4%, 32.3%)	30.5% (17.1%, 48.4%)	46.4% (28.8%, 64.9%)
24	10.8% (5.2%, 21.0%)	19.2% (9.7%, 34.4%)	31.9% (17.5%, 50.8%)	48.0% (29.5%, 67.1%)
25	11.4% (5.3%, 22.7%)	20.2% (10.0%, 36.6%)	33.3% (17.9%, 53.2%)	49.6% (30.1%, 69.2%)
26	12.1% (5.5%, 24.4%)	21.3% (10.3%, 38.9%)	34.7% (18.4%, 55.7%)	51.2% (30.8%, 71.2%)

Note: Cell entries show the point estimate of the three-year sexual recidivism, followed by, in parentheses, the estimate from the lower bound for the incremental b coefficient for STABLE-2007, followed by the estimate from the upper bound.

Since five-year sexual recidivism rates are more commonly used appendices B and C show the three-year point estimates of sexual recidivism and five-year sexual recidivism estimates projected from the three-year rates using the methods described by Thornton et al. (2021) as well as the projected 20-year rates which are taken as a good estimate of lifetime sexual recidivism rates.

Evaluators may also sometimes want to assign standardized risk levels based on Risk Matrix 2000 / STABLE-2007 combinations. Appendix A shows the appropriate standardized risk level for each combination. This was calculated by comparing the projected five-year sexual recidivism rates for each combination to the five-year sexual recidivism rates from the 2017 STABLE-2007 Evaluator Workbook for each risk level associated with Static-99R/STABLE-2007 combinations.

Development of Risk Matrix 2000 Need Indicators

A recent development has been the creation of RM2000 Need Indicators. These are scored from the existing RM2000 items and designed to provide information about the kind of criminogenic needs that are likely to be present. This is thought to be useful for initial treatment need assessments or psychosexual evaluations where limited information relevant to the direct assessment of dynamic risk factors may be available. It may also be particularly relevant to individuals being assessed in the first few months after release before sufficient time has passed to observe dynamic risk factors.

Static actuarial instruments like Risk Matrix 2000 (RM2000) are composed of statistical risk indicators. In contrast dynamic instruments are intended to assess meaningful psychological risk factors. The latter can be understood as criminogenic needs and so can form the basis for treatment planning. It is common then to assert that a limitation of static actuarial instruments is that they don't inform you about which criminogenic needs are present.

This view has been challenged by the results of factor analyses which include both static and dynamic items (e.g., Brouillette-Alarie & Hanson, 2015; Olver et al., 2021). These rather consistently find that the sexual criminality factor found in static items correlates substantially with the sexual deviance / poor sexual self-regulation factor found in dynamic items while the general criminality factor found in static items correlates with the antisocial traits / poor self-management factor found in dynamic items. This correspondence between the general patterns found in static and dynamic items suggests that it should be possible to create scales from static instruments which indicate the kind of criminogenic needs that are likely to be present.

Between them, the items from the RM2000 S and V scales provide a reasonable basis for assessing sexual criminality and general criminality and thus providing information about the likelihood that sexual deviance or antisocial traits are present. Factor analysis of RM2000 items were used to create two subscales as follows.

Sexual Criminality		General Criminality	
<i>Indicator</i>	<i>Points</i>	<i>Indicator</i>	<i>Points</i>
Sexual Appearances	0 1 2 3	Criminal Appearances	0 1
Male	0 1	Violent Appearances	0 1 2 3
Stranger	0 1	Burglary	0 2
Noncontact	0 1		
Sexual Criminality Score		General Criminality Score	

A simple interpretation system was created as shown below. This assumes that when an elevated level of either kind of criminality is present (total score of 2 or higher on that subscale), the corresponding kind of criminogenic need is more likely to be present.

Interpretation			
<i>Sexual Criminality Score</i>	Are criminogenic needs related to Sexual Deviance indicated?	<i>General Criminality Score</i>	Are criminogenic needs related to Antisociality indicated?
0	No	0	No
1	No	1	No
2+	Yes	2+	Yes

This was tested in three samples.

Sample 1

Thornton and Knight (2015) reported the results of scoring a variety of static and dynamic instruments in a sample of men referred for civil commitment (half of whom were committed while the other half were assessed but not committed). The SRA need framework was implemented for this sample, resulting in what was published as SRA-FV. Criminogenic Needs from the sexual interests domain and for the self-management domain were considered. In this study scores for individual Needs are on a 0 to 2 scale with a score greater than 1 indicating that the Need is clearly present. The number of Needs of each type were calculated and the percentage of people with any Needs from the Sexual Interests or Self-management domains determined (N=559).

Sexual Criminality	General Criminality	% with any Needs in the Sexual Interest domain	% with any Needs from the Self-Management domain
0/1	0/1	24%	37%
2+	0/1	65%	49%
0/1	2+	18%	78%
2+	2+	47%	79%

Sample 2

An Austrian data set (developed by Reinhard Eher and colleagues) was coded for Needs using the Structured Risk Assessment framework by Thornton and colleagues. Here Needs were classified as Sexual or Antisocial, which differs a little from the domain classification used for Sample 1. The sample size here was 331.

The table shows rates of Sexual or Antisocial criminogenic needs as a function of sexual or general criminality

Sexual Criminality	General Criminality	% with any Sexual Needs	% with any Antisocial Needs
0/1	0/1	27%	17%
2+	0/1	67%	25%
0/1	2+	12%	75%
2+	2+	54%	89%

Sample 3

The Dynamic Supervision Project sample (Hanson et al., 2015) had dynamic risk factors coded by supervising officers. The effective N varied depending on missing data but always exceeded 700. STABLE-2007 Sexual Deviance and Antisociality totals were computed and then recoded using cut-scores based on the score that was at or above the 75th percentile identifying high sexual deviance (score of 3+) and high antisociality (Score of 5+) groups.

Sexual Criminality	General Criminality	% with high Sexual Needs	% with high Antisocial Needs
0/1	0/1	25.6%	19.4%
2+	0/1	48.4%	31%
0/1	2+	26.0%	49%%
2+	2+	64.6%	72.9%

Summary of Results

In all three samples the RM2000 Need indicator being present (score of 2+) indicated a raised frequency of the corresponding kind of Need being present.

Suggested Language for Interpreting Treatment Need Indicators

Where criminogenic needs related to Sexual Deviance are indicated this means that many people with this score will have clinically significant long-term vulnerabilities of a sexual kind, such as offense-related sexual interests, sexual preoccupation, or sexual coping. Accordingly, interventions relevant to these kinds of criminogenic needs should be considered for inclusion in a treatment plan.

Where criminogenic needs related to Antisociality are indicated this means that many people with this score will have clinically significant long-term vulnerabilities of a more general, antisocial kind such as impulsiveness, hostility, aggression, or oppositional reactions to authority. Accordingly, interventions relevant to these kinds of criminogenic needs should be considered for inclusion in a treatment plan.

When STABLE-2007 can be scored it is possible to directly assess for the dynamic risk factors as defined by that instrument. STABLE-2007 ratings are based on a compromise between evidence for the long-term vulnerability over the person's life history and evidence regarding their recent functioning. This contrasts with the Risk Matrix 2000 Need Indicators which are more oriented to long-term vulnerabilities and do not take account of recent changes.

With this in mind, when the Risk Matrix 2000 Need Indicator is positive, for example indicating criminogenic needs related to Antisociality, but the STABLE-2007 ratings for antisocial traits are low or moderate, this can be interpreted as the individual having long-term vulnerabilities related to Antisociality which are not being expressed in the current environment.

Applying Risk Matrix 2000 with Internet Offenders

Individuals convicted of child sexual exploitation material offenses (CSEM; which typically involve downloading/viewing material from the Internet) would not have been present in the original RM2000 samples but have been present in some samples with which it has been tested.

These individuals may have the sense that they are not harming anyone by downloading indecent images of children. It is possible therefore that antisociality contributes less to

the prediction of future Internet offenses than it would to the prediction of offenses that are more obviously antisocial. On the other hand some Internet CSEM offenses would seem to more directly involve an impact on someone else (for example: downloading moving images depicting an adult anally penetrating a child) and so might draw more on antisociality, additionally all Internet offenses involve rule-breaking and so would draw on antisociality to some extent. Some Internet offenses would seem to draw heavily on the sexual deviance dimension (for example: downloading indecent images of young children would seem to imply a strong sexual interest in children) and there is some research evidence that offenses involving indecent images of children are more strongly associated with a sexual preference for children than other kinds of sexual offenses (Seto et al., 2006).

Large-scale and meta-analytic studies suggest that those individuals convicted of CSEM offenses who go on to commit known sexual reoffenses, are likely to commit another Internet CSEM offense, rather than escalating to a contact sexual offense (Seto, Hanson & Babchishin, 2011; Wakeling, Howard & Barnett, 2011). It has been suggested that while those individuals who commit sexual offenses online have similar dynamic risk factors to those who commit offline offenses, the former have greater self-control and more psychological barriers to acting on their deviant interests, than the latter (Babchishin, Hanson, & Hermann, 2011). A concern is that the detection rate for most Internet indecent image offenses may be very low. However, the low observed sexual recidivism rate would still suggest that the risk they present for committing contact offenses is low relative to other men sentenced for a sex offense.

Many Internet offenses would seem to meet the scoring criteria for the RM2000 item “Non-contact” and “Stranger”. A key issue then is whether these offenses truly imply the raised level of risk implied by scoring the non-contact item. In the light of the markedly low base rate for contact sex offenses for this group it seems likely that for Internet offenses involving the downloading of indecent images of children these features do not necessarily imply increased risk. Accordingly, the Non-Contact and Stranger items are not scored for those individuals whose only known sex offenses involve the downloading or distribution via the Internet of indecent images of children.

In a validation study using a large UK sample of custodial and community offenders, this revised RM2000 scoring procedure seemed to work reasonably well in the sense that it placed individuals with CSEM offenses’ risk appropriately relative to the risk presented by other men sentenced for a sex offense (Barnett, Wakeling & Howard, 2009). In a large (N=994) two-year follow up study (Wakeling, Howard & Barnett, 2011) of this population the RM2000 scales had AUCs varying between 0.67 (for sexual recidivism) and 0.87 (for non-sexual violence). It is important to note that for sexual recidivism most of this prediction came from the highest risk category. Elliot et al. (2019) published a longer follow up (mean 13 years) of men who had participated in treatment after committing an Internet indecent image offense, finding a 12.6% rate of reconviction for any sexual offense. They found RM2000 to have an AUC of 0.65 in what they call a “mixed group” who had a history of both Internet indecent image offenses and other offenses. They identified a pure Internet indecent image group for which prediction was

weak, but this group contained very few individuals from the highest risk category. Taken together these results suggest that where individuals who have committed Internet indecent image offenses fall into the Well Above Average risk category this should be taken seriously. It is important to note that the three studies cited in this paragraph have largely overlapping samples (i.e., they do not represent three unique validations of the Risk Matrix with individuals convicted of CSEM offenses). Helmus et al. (2024) reported a fully independent cross-validation of the Risk Matrix 2000 in a Canadian sample of individuals convicted for CSEM offenses. The AUC obtained (0.66) was similar to that reported in earlier English studies.

Internet indecent image offenses should be distinguished from offenses where the offender interacts with a specific child through the Internet (e.g. through a web cam or in a chat room), for example exposing themselves to the child, manipulating the child into exposing sexual body parts, or seeking a meeting for sexual purposes. These offenses more closely resemble traditional sex offenses and the normal scoring rules and recidivism norms apply.

In addition to those who commit sexual offenses via the Internet, there are individuals who have on their phone indecent images or images depicting extreme pornography. These images may have resulted from the individual photographing a child or they might have been received from someone else, for example as a text message.

Where the individual took such a photograph this implies direct contact with a victim, and as such, is akin to a prototypical sexual offense. In these cases, normal scoring rules should apply.

Those whose offenses relate to being in possession of, and therefore having received an indecent image/extreme pornography via text message, or those who have distributed, using this medium, such images to other individuals should be reviewed on a case-by-case basis.

Recommendations for Using STABLE-2007 with Internet Offenders

There is a limited amount of research studying the predictive value of STABLE-2007 with Internet Offenders. Babchishin et al. (2023) found that STABLE-2007 predicted at least as well for men who had committed CSEM offenses as for those who had not. This suggests that evaluators could use both Risk Matrix 2000 and STABLE-2007 with this population. The difficulty is that, as yet, they have not been tested on together, so we do not know that the general integration equation works as well for this population, although there is no reason for supposing that it does not since both scales independently work for those who have committed CSEM offenses. It is proposed therefore that evaluators score both scales when they have the information to do so and use the STABLE-2007 / RM2000 integration tables. They should present the Risk Matrix 2000 results first since the evidence supporting that scale's relation to recidivism is stronger. Then they could present results of the STABLE and the STABLE-2007 / RM2000 integration. The results

should then be interpreted with caution and as part of this the evaluator should emphasize the Risk Category (see Appendix A) rather than the recidivism estimate.

Applying RM2000S with Other Marginal Cases

Application of RM2000 with most individuals convicted for sexual offending is straightforward. Individuals like them were well represented in the samples used to derive or test RM2000 and it is reasonable to expect the results obtained in these research samples to be relevant in assessing their risk of sexual recidivism. There are other groups of individuals convicted for sexual offending for whom RM2000 is clearly not applicable. Examples would be young adolescents or females. Between these groups are marginal cases where there are some grounds for expecting RM2000 to be applicable but also some grounds for questioning its applicability. This section identifies some of these marginal groups and gives guidance on when and how to apply RM2000 with them.

The following marginal groups are considered.

- Those who have committed sexual murder
- Mentally disordered individuals who have committed a sex offense
- Individuals with poorer cognitive functioning who have committed a sex offense
- Older adolescents
- Older adults
- Those serving indeterminate / life sentences

Before considering these groups in particular it is useful to articulate some general principles. Six principles are followed.

1. How well represented was this kind of individual in the samples used to develop or test RM2000?
2. How well represented was this kind of individual in samples used to develop or test closely similar actuarial risk assessment instruments?
3. How well represented was this kind of individual in studies that supported the predictive value of the dimensions that underlie RM2000 and similar actuarial instruments (sexual deviance; antisociality; immaturity)?
4. Are there theoretically plausible or empirical reasons for supposing that the underlying dimensions would have a different predictive value for this kind of marginal case?
5. Are there theoretically plausible or empirical reasons for supposing that the items used by RM2000 to index these dimensions will be less good at doing this for this kind of marginal case?
6. Are there theoretically plausible or empirical reasons for supposing that this kind of marginal case will have a recidivism rate that is distinctively different from that which would be expected on the basis of the RM2000 risk category into which they fall?

How “well represented this kind of individual” was in research studies is a matter of degree. It is worth distinguishing several points on the continuum of “well-representedness”.

At one extreme individuals have been broken out as a separate subgroup and analyses of predictive accuracy run specifically for this subgroup. For example, if “this kind of individual” is persons who have committed extra-familial child-molestation then the question would be has predictive accuracy been assessed for samples composed solely of individuals who have committed that kind of offense.

Next to this is the kind of individual who was present in research studies in sufficient numbers that, if the scale had not worked for this kind of individual, results for the overall sample would have been poor. If at least a quarter of the offenders in research samples are of this type then it is reasonable to expect that the scale is applicable to them.

Those who have committed Sexual Murder

Two variants of sexual murder can usefully be distinguished.

First, there are prototypical sexual offenses where the sexual offense was followed by killing the victim.

Individuals who committed this kind of offense would have been included in the original research samples but they would have been present in small numbers so that one cannot infer from their presence in the original samples that RM2000 must have had reasonable predictive accuracy with them. However, there is no obvious reason for supposing that RM2000 would not predict future sexual offending for them. One might argue that this group would be more callous (and therefore more risky). On the other hand, one could argue that guilt about committing murder would act as a deterrent from committing further sexual offenses. Neither argument is particularly plausible, and in as much as they both possess some marginal plausibility, they might be regarded as cancelling each other out.

Second there are instances where no prototypical sexual offense was committed but there was a murder with a sexual element. An example would be a murder in which the victim was sexually mutilated. Individuals who had committed this kind of offense would not have been in the original RM2000 numbers in other than minute numbers.

Since this is a qualitatively different kind of offense from prototypical sexual offenses some caution must be observed in applying RM2000 to men who have committed them. However, it is plausible to suppose that sexual deviance, general antisociality, and immaturity would still be relevant risk factors. Indeed, since the type of offense seems to imply both an offense-related sexual interest and an unusual level of callousness one might argue that RM2000 would be likely to underestimate the level of risk. This is particularly the case because similar prior offenses may not have been recognized as sexual.

In the light of this it is suggested that, in the absence of new research specifically examining this population, RM2000 be used with this group only with considerable caution and accompanied by a more comprehensive clinical assessment which would be given more weight.

Mentally Disordered Individuals who have committed Sexual Offenses

The original RM2000 research samples would have included some mentally disordered individuals who had committed sexual offenses as significant numbers of such people are held in prison but a mentally-disordered individual who solely received a mental health disposal would not have been included in these research samples. However, one of the main Static-99 samples (Hanson and Thornton, 2000) was composed of mentally-disordered individuals and Static-99 had reasonable predictive accuracy in that sample. Thus, it is reasonable to expect that RM2000 (which is quite similar to Static-99) would also work with mentally disordered individuals who have committed a sexual offense.

There are two complications that can occur with this group. First, sometimes their past offenses may have received mental health disposals, even being informally diverted to some mental health disposal rather than being prosecuted. If these events are not identified and counted (for example as Sexual Appearances) the RM2000 classification may underestimate risk. Secondly, mentally disordered offenders often have psychological risk factors (such as personality disorders) that are not fully tapped by the RM2000 items. This too will lead to an underestimation of risk.

Thus, when applying RM2000 with mentally disordered individuals it should be accompanied by a more comprehensive psychological assessment that is sensitive to this potential underestimation of risk and which also examines the impact of the acute form of the mental disorder on risk and how well managed the disorder is likely to be with available resources.

Individuals with poorer cognitive functioning

Individuals with an IQ below 70 who have committed a sexual offense would have been rare in the original research samples but individuals with IQs between 70 and 80 should have been present in the original samples in reasonable numbers. Additionally, Static-99, an instrument that is similar to RM2000, has been shown to have reasonable predictive accuracy with offenders with poorer cognitive functioning.

The general problem with this group of individuals is that their past offending may sometimes have been dealt with by non-criminal justice disposals and that consequently a count of Sexual Appearances that considers only convictions and criminal justice sanctions may lead to a RM2000 classification that underestimates risk.

Individuals who committed a Sex Offense as an older adolescent

This refers to males whose most recent sexual offense was committed aged 17 but who now may be aged anything from 17 upwards.

If they are aged at least 18 then formally they fall within the range of individuals for whom RM2000 is recommended. Such individuals were represented in reasonable numbers in the younger age-band (18 to 24 on release) in the original RM2000 research samples. A recent meta-analysis of the predictive accuracy of the Static-99 found that it showed moderate predictive accuracy with juveniles who had committed a sexual offense (Viljoen et al, 2012).

If they are now aged 17 or younger on release they are formally outside the range for which RM2000 is recommended. However, as noted, Viljoen et al's results suggest that a similar scale did have predictive accuracy with this population. Of more importance is that the base rate of sexual recidivism as an adult appears to be markedly low for individuals whose only sexual offense was committed as a young juvenile (Caldwell, 2009). This finding, however, is based on samples where the age at last sex offense would typically have been around 13 or 14. Someone who last committed a sex offense when aged 16 or 17, and who is currently aged 17, may (or may not) be more similar to slightly older individuals and different from young juveniles. Currently, data for this group is not available so there isn't an empirical basis to resolve this.

Older adults

Among adults convicted for a sex offense, there is a trend for older men to have lower sexual recidivism rates than younger men (Hanson & Bussiere, 1998). RM2000S takes into account aging that occurs in the younger adult years. However, there is now good evidence for a markedly lower rate of sexual recidivism for individuals released aged 60 and older (Hanson, 2005; Helmus et al, 2012).

Supplementary analysis of the International Norms data set indicated that offenders aged 60+ on release had lower recidivism rates than would have been expected from the RM2000S risk category. The magnitude of this effect is equivalent to one risk category so it is recommended that for offenders released at the age of 60 or older risk should be reduced by one risk category.

Those serving indeterminate or life sentences

Life sentence prisoners would have been included in the RM2000 development and validation samples, though they may have been present in small numbers. However, there is no obvious reason for supposing that RM2000 would not predict future sexual offending for these groups of individuals.

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**Appendix A: Standardized Risk Levels associated for combinations of with
RM2000/S and STABLE-2007**

STABLE Score	RM2000/S Below Average	RM2000/S Average	RM2000/S Above Average	RM2000/S Well Above Average
0	I	III	IVa	IVb
1	I	III	IVa	IVb
2	II	III	IVa	IVb
3	II	III	IVa	IVb
4	II	III	IVa	IVb
5	II	III	IVa	IVb
6	II	III	IVa	IVb
7	II	IVa	IVa	IVb
8	II	IVa	IVb	IVb
9	III	IVa	IVb	IVb
10	III	IVa	IVb	IVb
11	III	IVa	IVb	IVb
12	III	IVa	IVb	IVb
13	III	IVa	IVb	IVb
14	III	IVa	IVb	IVb
15	III	IVa	IVb	IVb
16	III	IVa	IVb	IVb
17	III	IVa	IVb	IVb
18	IVa	IVa	IVb	IVb
19	IVa	IVb	IVb	IVb
20	IVa	IVb	IVb	IVb
21	IVa	IVb	IVb	IVb
22	IVa	IVb	IVb	IVb
23	IVa	IVb	IVb	IVb
24	IVa	IVb	IVb	IVb
25	IVa	IVb	IVb	IVb
26	IVa	IVb	IVb	IVb

Note: Cell entries denote standardized risk levels as I, II, III, IVa and IVb. Corresponding nominal labels are Low, Below Average, Average, Above Average, and Well Above Average.

Appendix B: Integrating RM2000/S with STABLE-2007 for Five-Year Sexual Recidivism

STABLE Score	RM2000/S Below Average	RM2000/S Average	RM2000/S Above Average	RM2000/S Well Above Average
0	2.5%→3.7%	4.9%→7.2%	9.2%→13.3%	16.6%→23.6%
1	2.7%→4.0%	5.2%→7.6%	9.7%→14.0%	17.5%→24.8%
2	2.9%→4.3%	5.5%→8.0%	10.3%→14.9%	18.4%→26.1%
3	3.1%→4.6%	5.8%→8.5%	10.9%→15.7%	19.4%→27.4%
4	3.2%→4.7%	6.2%→9.1%	11.5%→16.5%	20.4%→28.8%
5	3.5%→5.1%	6.6%→9.6%	12.2%→17.6%	21.5%→30.2%
6	3.7%→5.4%	7.0%→10.2%	12.9%→18.5%	22.6%→31.6%
7	3.9%→5.7%	7.4%→10.8%	13.6%→19.5%	23.7%→33.0%
8	4.1%→6.0%	7.9%→11.5%	14.4%→20.6%	24.9%→34.7%
9	4.4%→6.5%	8.3%→12.0%	15.2%→21.7%	26.1%→36.2%
10	4.7%→6.9%	8.8%→12.8%	16.0%→22.8%	27.3%→37.8%
11	5.0%→7.3%	9.4%→13.6%	16.9%→24.0%	28.6%→39.4%
12	5.3%→7.7%	9.9%→14.3%	17.8%→25.3%	30.0%→41.1%
13	5.6%→8.2%	10.5%→15.2%	18.8%→26.6%	31.3%→42.8%
14	6.0%→8.7%	11.1%→16.0%	19.8%→27.9%	32.7%→44.5%
15	6.4%→9.3%	11.8%→17.0%	20.8%→29.3%	34.1%→46.3%
16	6.7%→9.8%	12.5%→18.0%	21.9%→30.7%	35.6%→48.0%
17	7.2%→10.5%	13.2%→18.9%	23.0%→32.2%	37.1%→49.8%
18	7.6%→11.1%	13.9%→19.9%	24.2%→33.8%	38.6%→51.7%
19	8.1%→11.7%	14.7%→21.0%	25.4%→35.4%	40.1%→53.4%
20	8.5%→12.4%	15.5%→22.1%	26.6%→36.8%	41.7%→55.3%
21	9.1%→13.2%	16.4%→23.3%	27.9%→38.5%	43.2%→57.1%
22	9.6%→13.9%	17.3%→24.5%	29.2%→40.2%	44.8%→58.8%
23	10.2%→14.8%	18.2%→25.8%	30.5%→41.8%	46.4%→60.6%
24	10.8%→15.6%	19.2%→27.1%	31.9%→43.5%	48.0%→62.3%
25	11.4%→16.4%	20.2%→28.5%	33.3%→45.3%	49.6%→64.1%
26	12.1%→17.4%	21.3%→29.9%	34.7%→47.0%	51.2%→65.8%

Note: Cell entries show the three-year point estimates followed by an arrow (→) followed by the five-year sexual recidivism rates projected from the three-year rates using the spreadsheet that implements the model described by Thornton et al. (2021)

Appendix C: Integrating RM2000/S with STABLE-2007 for Twenty-Year Sexual Recidivism

STABLE Score	RM2000/S Below Average	RM2000/S Average	RM2000/S Above Average	RM2000/S Well Above Average
0	2.5%→7.0%	4.9%→13.4%	9.2%→24.3%	16.6%→40.9%
1	2.7%→7.6%	5.2%→14.2%	9.7%→25.5%	17.5%→42.7%
2	2.9%→8.1%	5.5%→15.0%	10.3%→26.9%	18.4%→44.6%
3	3.1%→8.6%	5.8%→15.8%	10.9%→28.3%	19.4%→46.5%
4	3.2%→8.9%	6.2%→16.8%	11.5%→29.7%	20.4%→48.6%
5	3.5%→9.7%	6.6%→17.8%	12.2%→31.3%	21.5%→50.6%
6	3.7%→10.3%	7.0%→18.9	12.9%→32.9%	22.6%→52.5%
7	3.9%→10.8%	7.4%→19.9%	13.6%→34.5%	23.7%→54.4%
8	4.1%→11.3%	7.9%→21.1%	14.4%→36.3%	24.9%→56.6%
9	4.4%→12.2%	8.3%→22.0%	15.2%→38.0%	26.1%→58.6%
10	4.7%→12.9%	8.8%→23.3%	16.0%→39.6%	27.3%→60.7%
11	5.0%→13.7%	9.4%→24.8%	16.9%→41.5%	28.6%→62.7%
12	5.3%→14.5%	9.9%→25.9%	17.8%→43.4%	30.0%→64.8%
13	5.6%→15.3%	10.5%→27.4%	18.8%→45.4%	31.3%→66.7%
14	6.0%→16.3%	11.1%→28.8%	19.8%→47.3%	32.7%→68.7%
15	6.4%→17.3%	11.8%→30.4%	20.8%→49.2%	34.1%→70.6%
16	6.7%→18.1%	12.5%→32.0%	21.9%→51.3%	35.6%→72.6%
17	7.2%→19.3%	13.2%→33.6%	23.0%→53.3%	37.1%→74.4%
18	7.6%→20.4%	13.9%→35.1%	24.2%→55.5%	38.6%→76.3%
19	8.1%→21.6%	14.7%→36.9%	25.4%→57.6%	40.1%→78.0%
20	8.5%→22.6%	15.5%→38.6%	26.6%→59.5%	41.7%→79.8%
21	9.1%→24.0%	16.4%→40.4%	27.9%→61.6%	43.2%→81.4%
22	9.6%→25.2%	17.3%→42.3%	29.2%→63.6%	44.8%→82.9%
23	10.2%→26.7%	18.2%→44.2%	30.5%→65.6%	46.4%→84.4%
24	10.8%→28.1%	19.2%→46.1%	31.9%→67.5%	48.0%→85.7%
25	11.4%→29.5	20.2%→48.1%	33.3%→69.6%	49.6%→87.1%
26	12.1%→31.1%	21.3%→50.2%	34.7%→71.4%	51.2%→88.3%

Note: Cell entries show the three-year point estimates followed by an arrow (→) followed by the twenty-year sexual recidivism rates projected from the three-year rates using the spreadsheet that implements the model described by Thornton et al. (2021)

Appendix D: Risk Matrix 2000 Scoring Form

The following two pages show the recommended layout for the Risk Matrix 2000 scoring form. However, any format that is logically equivalent to this may be used.

Researchers may find it better to enter individual items from the form into a spreadsheet or an SPSS Data file and use Syntax to automatically determine the S and V risk categories and the need indicators. Forensic evaluators, on the other hand, may be asked to provide a score sheet showing how risk categories were calculated.

RISK MATRIX 2000/ SV SCORING FORM

Offender Identification Information	Scorer Identification Information
Family Name, Forenames	Family Name, Forenames
Date of Birth	Date RM2000 Completed

RM2000/S Scale – Risk for Sexual Recidivism

Step One: Initial Risk Category

Age	18-24 = 2 points; 25-34 = 1 point; Older = 0 points
Sexual Appearances	1 = 0 points; 2 = 1 point; 3,4 = 2 points; 5+ = 3 points
Criminal Appearances	4 or less = 0 points; 5 or more = 1 point

Points	0	1-2	3-4	5-6
Category Label	Below Average	Average	Above Average	Well Above Average

Step Two: Revised Risk Category

Male	Stranger	Single	Non-contact
0 / 1	0 / 1	0 / 1	0 / 1

Put the risk category up one level if two or three aggravating factors apply, and up two levels if four aggravating factors apply. Circle the Revised S-Category.

Revised S-Category	<i>Below Average</i>	<i>Average</i>	<i>Above Average</i>	<i>Well Above Average</i>
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RM2000/V – Risk for Violent Recidivism

Age	18 to 24 = 3 points; 25 to 34 = 2 points; 35 to 44 = 1 point; Older = 0 points
Violent Appearances	0 = 0 points; 1 = 1 point; 2-3 = 2 points; 4+ = 3 points
Burglary	None = 0 points; Any = 2 points

Enter the number of points accrued above in the table below and circle the corresponding V-Category.

Points	0-1	2-3	4-5	6+
V-Category	<i>Below Average</i>	<i>Average</i>	<i>Above Average</i>	<i>Well Above Average</i>

Recidivism Norms

S-Scale Norms		
<i>S-Category</i>	<i>5 Yr Sex Recidivism</i>	<i>Risk Ratio</i>
Below Average	4.4%	0.48
Average	10.0%	1.00
Above Average	21.4%	2.10
Well Above Average	40.0%	4.40

V-Scale Norms		
<i>V-Category</i>	<i>5 Yr Violent Recidivism</i>	<i>Risk Ratio</i>
Below Average	5.6	0.46
Average	13.0	1.00
Above Average	27.4	2.16
Well Above Average	48.8	4.64

Source: Lehmann, R.J.B., Thornton, D., Helmus, L-M., & Hanson, R.K. (2016) Developing non-arbitrary metrics for risk communication: Norms for the Risk Matrix 2000. *Criminal Justice and Behavior*, 43, 1661–1687.

Need Indicators

Sexual Criminality		General Criminality	
<i>Indicator</i>	<i>Points</i>	<i>Indicator</i>	<i>Points</i>
Sexual Appearances	0 1 2 3	Criminal Appearances	0 1
Male	0 1	Violent Appearances	0 1 2 3
Stranger	0 1	Burglary	0 2
Noncontact	0 1		
Sexual Criminality Score		General Criminality Score	

Note: Transfer points assigned to each indicator from the front page. Sum points to get scores.

Interpretation			
<i>Sexual Criminality Score</i>	Are criminogenic needs related to Sexual Deviance indicated?	<i>General Criminality Score</i>	Are criminogenic needs related to Antisociality indicated?
0	No	0	No
1	No	1	No
2+	Yes	2+	Yes

Where criminogenic needs related to Sexual Deviance are indicated this means that many people with this score will have clinically significant long-term vulnerabilities of a sexual kind, such as offense-related sexual interests, sexual preoccupation, or sexual coping. Accordingly, interventions relevant to these kinds of criminogenic needs should be considered for inclusion in a treatment plan.

Where criminogenic needs related to Antisociality are indicated this means that many people with this score will have clinically significant long-term vulnerabilities of a more general, antisocial kind such as impulsiveness, hostility, aggression, or oppositional reactions to authority. Accordingly, interventions relevant to these kinds of criminogenic needs should be considered for inclusion in a treatment plan.