SUBSTANCE ABUSE PROGRAMMES: PRINCIPLES OF GOOD DESIGN AND ASSESSMENT

Brian A. Grant, Ph.D.*

I. INTRODUCTION

Effective correctional programmes have been shown to reduce the likelihood that offenders will be readmitted to prison (Andrews et.al., 1990; Gendeau, Little & Goggin, 1996; Lipsey, 1995; Lösel, 1995). Through the use of good programming it is possible to assist offenders to become productive citizens and to reduce crime. Over the past 20 years research has been conducted to determine the types of programmes that will be effective at reducing new offending and to determine the characteristics of successful programmes. During the 70's and 80's some researchers in criminology argued that programmes cannot work with offenders, but this literature has been largely discredited in recent years (Andrews & Bonta, 2002).

However, while research is showing positive effects of treatment on offender behaviour there remains a need for high quality research to support and guide programme developers. Investing resources in programmes that may have no effect is inefficient, and in some cases, can be counterproductive, leading to higher rates of recidivism. Research can help to understand the impacts of interventions on offenders and improve the quality of programming by identifying those components that produce positive results.

For the purposes of this paper, the general correctional treatment research literature will be examined as this literature is applicable to all forms of correctional programmes. Whenever possible, examples will be presented from research on substance abuse.

II. THEORETICAL MODEL

Psychological and sociological theories help in understanding human behaviour. By selecting an appropriate theory one has a road map of how behaviour may be changed and what to look at when evaluating the effectiveness of programmes. Sociological theories are effective for helping us understand the changes that are observed in groups, but treatment is focused on the individual. Therefore, psychology, with its emphasis on individual behaviour, provides a starting point for appropriate theories to assist with programme development.

Among the many psychological theories that could be considered, social learning theory is one that has been applied successfully to treatment programmes and to understanding the behaviour of offenders (Andrews & Bonta, 2002). Social learning theory, in its simplest form, suggests that increases in rewards for a behaviour will increase the probability that a behaviour will occur again (Bandura, 1971, 1986). Rewards may be concrete and tangible like money or food, but they may also be more conceptual and abstract. Positive praise can be as effective, or more effective, than tangible rewards and the expectation of rewards also has a strong effect on behaviour.

Modeling is another way in which people can learn appropriate behaviours. In correctional settings, staff and programme facilitators can model positive, prosocial behaviours as examples to the offenders in custody. Offenders observing these behaviours will model them and learn appropriate responses. One implication of modeling is all staff in a correctional institution must be expected to show appropriate behaviours, not just programming staff. Correctional staff who do not deliver programmes have much greater contact with offenders than programme staff who may only work with an offender group for one or two hours a day, or a week.

* Director,
  Addictions Research Centre,
  Correctional Service Canada

Given a good theoretical background it is possible to design and develop effective correctional programmes.

III. RISK/NEED RESPONSIVITY

One of the most prolific writers in the area of assessment and treatment delivery for offenders has been Prof. Don Andrews from Carleton University in Canada. In his writing he has argued that there are four basic principles to be taken into account when assessment and treatment services for an offender population (See for example, Andrews & Bonta, 2002). The four principles are:

(i)   Risk
(ii) Need
(iii) Responsivity
(iv) Professional discretion

Each of these principles will be explained in the following sections.

A. Risk Principle
The risk principle states that offenders with the highest risk of re-offending are the most in need of intervention and the most likely to benefit from intervention. To apply this principle, an assessment of risk to re-offend is required. The assessment may be done using a variety of assessment instruments, like the ones used by the Correctional Service Canada and described in the previous paper (Grant, 2003), and others, such as the Level of Service Inventory (LSI) (Andrews & Bonta, 1995) that will be described later in this paper. Whatever type of assessment is conducted, the goal is to determine which offenders are at greatest risk to offend (Andrews, 1996). Having identified those at greatest risk to re-offend, treatment resources may be directed at the highest risk group.

Why is this important? Resources for treatment are never unlimited and planners and policy makers must decide how to effectively use the resources. Research has shown that using treatment resources to address the problems of offenders who are at a low risk to re-offend is not very effective. Those who are unlikely to re-offend will serve their sentence, be released to the community and are unlikely to return, regardless of whether any treatment is offered. This does not mean that the lowest risk groups are ignored, but that they require only minimal resources.

Offenders who are at the highest risk to re-offend require the most intensive treatment services if the goal is to reduce the likelihood of returning to prison. As this group is also likely responsible for the highest volume of crime, changing their behaviour through treatment will result in the largest decrease in criminal activities. The risk principle is an important principle in the treatment of offenders, but is also a management principle that directs resources to where they can have the greatest impact.

B. Need Principle
The need principle states that in a correctional system only criminogenic needs should be addressed. The reason for this is that if one is trying to change criminal behaviour, it is only those factors that are associated with criminal activity that should be addressed. Other factors may seem likely to be targets for treatment, but they will not result in reduced crime by the offender. Extensive research has identified a number of needs areas that are associated with criminal behaviour. The research has demonstrated that if these need areas are addressed through treatment programmes the likelihood of a new criminal offence will be decreased. The need areas most likely to have an impact on criminal behaviour are presented in Table 1.

Table 1. Criminogenic Needs Identified in the Level of Service Inventory (LSI)

Need area	Samples from the LSI
Education/employment	Employment history
	Employment skills
	Minimal education
Financial	Reliance on social assistance

Table 1. Criminogenic Needs Identified in the Level of Service Inventory (LSI)

Need area	Samples from the LSI
Family/Marital	Dissatisfaction with marital situation
	Problems with family
	Criminal family
Accommodation	Poor
	Frequent changes
	High crime neighbourhood
Leisure/recreation	Poor use of time
	Lack of participation in organized activity
Companions	Social isolate
	Criminal acquaintances & friends
	Limited non-criminal associates
Substance abuse	Alcohol and drug problem (past & current)
	Substance abuse associated with criminal behaviour
Emotional personal	Interference with normal behaviour
	Psychological/psychiatric treatment
Attitude/orientation	Supportive of crime
	Poor attitude toward sentence and supervision
	Unfavourable toward convention

These needs are similar to those used by the Correctional Service in its assessments of offender needs, although the descriptions of the needs in this case are taken from the Level of Service Inventory (LSI), a different assessment instrument.

C. Responsivity
The Responsivity principle states the treatment should be offered in a form that is most appropriate to the offender. This means that the style of the treatment should be consistent with the learning needs of the offender and in a style that the offender is accustomed to. The selection of the best treatment approach should be based on empirical research. The basic premise is that people have specific styles of learning and if a treatment is to be effective it must take account of learning styles (Andrews & Bonta, 2002).

An example of the responsivity principle in action is the finding that cognitive behavioural programmes are most effective with correctional populations (Gendreau, Little & Goggin, 1996). The learning style used in these programmes is consistent with the learning experience of the offenders, relying on participative learning exercises, skill development and repetition. On the other hand, treatments that rely on psychodynamic principles of introspection and self-analysis have not been effective with offenders because they are less inclined to verbalize their problems, or to think about the impacts their behaviours have on others. Psychodynamic methods will work with other groups of people who are accustomed to verbalizing their problems and for whom introspection is not problematic. Another example of the responsivity principle in practice is designing programmes that take account of cultural differences rather than copying programmes from other cultures. It may not be appropriate for your country to copy a programme from Canada, rather the programme should be designed from basic principles, but include proper adaptation of cultural norms.

D. Professional Discretion
The principle of professional discretion recognizes that assessment instruments cannot be designed to address every case. There are, at times, unique characteristics of an individual or situation that must be taken into account when making decisions about treatment. This means that there will be situations when the assessment tools might indicate an offender is low risk to re-offend, but special circumstances, such as

behaviour since arrest, may indicate that there is a high risk or probability of re-offending. The professional classification officer should use this information when making decisions.

Professional discretion must be used with care. Professional judgments that override the assessment from objective assessment instruments should be monitored to ensure they are being made with appropriate understanding of the issues. Ideally, all override decisions would be recorded and reviewed regularly to ensure they are based on an understanding of the goals of the assessment. There have been instances within the Correctional Service where a new assessment instrument has been overridden in 40% of cases. Analysis of these overrides indicated that the decision makers did not fully understand the results of the assessment and believed their personal judgments were more accurate. Personal judgment, without supporting reasoning, is not an effective method of decision making. Many studies have indicated that properly completed, structured and objective assessment is more accurate and consistent than the judgment of professionals alone (Andrews & Bonta, 2002).

A final point about assessment in the context of professional judgment is that decisions about treatment and interventions are never made in isolation or based on a single assessment instrument. Rather, one must look at multiple sources of information from interviews, assessment instruments and background information. This is sometimes referred to as a multi-method approach. It is when all of the information is considered that we can be more certain that assessments are accurate.

E. Static and Dynamic Risk
Assessments of risk may be made using two types of information, static and dynamic. Static information is information that cannot change. For example, age and gender are clearly static factors. History of previous offences and type of crimes committed are also static factors. It is not possible to change these factors through treatment, so knowing them will not effectively guide the type of treatment needed. In addition, if a subsequent assessment is completed it will produce the same result because it is based on the same information. Therefore, it is not possible to measure change, or reductions (or increases) in risk using static measures. Criminal history risk is measured using static information.

Dynamic risk factors are important because these are factors that are changeable. Risk factors that are changeable are amenable to treatment and with these it is possible to measure changes to determine if the offenders have increased or decreased their risk of reoffending. The criminogenic needs identified earlier are examples of dynamic risk factors that can be changed. For example, treating substance abuse problems can reduce the risk of drug use that is likely to result in a return to prison and educational and employment programmes can increase skills and work opportunities thereby providing for jobs after release.

IV. DOES PROGRAMMING WORK

To determine if correctional programmes have an effect on offender behaviour requires the review of an extensive research literature. Earlier, reviewing this literature would have meant reading and summarizing each study and then attempting to locate the consistencies across each study. When the number of studies to be reviewed is in the hundreds finding trends in their results becomes very difficult and other methodologies are required.

Researchers started to address this problem in the eighties through a method called Meta-analysis. Meta-analysis is basically a structured means by which a large number of studies can be reviewed. The results of each study are coded to identify the presence or absence of key factors of the studies and then the outcome measures are associated with these factors. Following the analyses, it becomes possible to identify the factors that are the most effective at achieving behaviour change. In effect, a meta-analysis is a quantitative method of summarizing the outcome or results from a diverse group of studies. Statistics have been identified for measuring the strength of observed results and these include the Phi coefficient, Pearson's r, z+ score and the Common Language Effect size. The first three of these are standard statistical measures of association and provide a means of looking at vastly different studies to summarize their results.

A major meta analysis completed in 1996 by Dr. Paul Gendreau at the University of New Brunswick in Canada (Gendreau, Little & Goggin, 1996) looked at which factors are associated with reductions in

recidivism. This study is important because it provides clear empirical evidence of the factors associated with positive correctional outcomes.

The study had four main goals:

(i)   Determine which factors are the best predictors of recidivism
(ii)   Demonstrate the link between the predictors and theory
(iii) Compare differences in the ability of dynamic and static factors to predict recidivism
(iv)   Compare effectiveness of measures or risk, both individually and in combination

The study looked at the results of 131 studies and from these obtained over 1,000 effect relationships. Research included in the study had a minimum follow-up period of 6 months, the recidivism was measured for adults, there had to be a clear measure indicating whether or not there was recidivism, and statistical tests of results had to be present.

The factors investigated in the study are presented in Table 2.

Table 2. Predictors of Recidivism used in Gendreau et.al., (1996)

Static Risk Factors	Dynamic Risk Factors	Risk Measures (use combinations of factors)
Adult criminal history	Anti-social personality	Level of supervision inventory (LSI)
Pre-adult antisocial behaviour	Companions	Salient Factor Score (SFS)
Family criminality	Criminogenic needs	Wisconsin system
Family rearing practices	Interpersonal conflict	Others
Family structure	Personal distress	
Age	Social achievement	**Antisocial personality scales**
Gender	Substance abuse	Psychopathy checklist (PCL)
Intellectual functioning		Other
Race		
Socio-economic status		

Table 3 presents the results of the meta-analysis. The larger the number in the second column the more correlated the factors are with recidivism, and therefore the more effective they are for assessing offenders' risk of reoffending.

Table 3. Results of Meta-analysis of Predictors of Recidivism

Factor Studied	Mr
Individual Factors	
Criminogenic needs factor	.17
Criminal history	.16
Social achievement	.15
Age, gender & race	.14
Family factors	.12
Intellectual functioning	.07
Socio-economic status	.06
Personal distress	.06

Table 3. Results of Meta-analysis of Predictors of Recidivism

Factor Studied	M*r*
Dynamic vs. static factors	
Dynamic predictors	.15
Static predictors	.13
Risk scales	.30

The study shows that the three factors that were the most correlated with recidivism were criminogenic need factors, criminal history and social achievement. Other important factors were age, gender and race, and family background. These therefore, are the factors that should be assessed when determining who requires the most intervention. You will note that these are the factors that are included in the risk and need assessments described earlier. Also of note, is the finding that factors like socio-economic status, intellectual functioning and personal distress are not highly correlated with recidivism. Therefore, these are not good targets for effective intervention. Sociological theories of the criminal behaviour often raise socio-economic status as an important factor in understanding criminal behaviour, but these results suggest that it is not a factor that needs to considered.

The results in Table 3 also compare the effectiveness of static and dynamic factors. From the results in the table it can be seen that dynamic factors are slightly more effective at predicting recidivism than static factors, but both types of factors are very similar in their predictive abilities.

Next, the results in Table 3 show that risk scales are actually the best predictors of recidivism. This occurs because risk scales studied in the meta-analysis combine the most important predictors of criminal behaviour into a single assessment instrument. The result demonstrates the importance of considering multiple factors in the assessment of risk and how this can improve the accuracy of prediction. In addition, the risk scales generally include both dynamic and static factors thereby further improving their predictive accuracy.

Finally, the study compared the effectiveness of a number of different risk scales. Overall, the Level of Service Inventory (LSI) (Andrews & Bonta, 1995) provided the most effective prediction of recidivism. This scale includes many of the dynamic and static factors discussed. Other scales studied include the Salient Factor Score (SFS) (Hoffman, 1983), the Wisconsin risk assessment tool (Clear & Gallager, 1985) and the Psychopathy Checklist (PCL) (Hare, 1990, 1996). Full results are presented in Table 4.

Overall, the result of this study provide a list of the factors that should be addressed in correctional programming and they show that using risk assessment tools that combined different factors and both dynamic and static measures are the most effective tools for predicting the likelihood of new offences after release from prison.

Table 4. Comparison of Risk Assessment Scales

Risk scales	M*r*
Level of Service Inventory (LSI)	.35
Salient Factor Score (SFS)	.29
Wisconsin	.27
Other	.30
Antisocial personality	
Psychopathy checklist	.28
Other	.16

V. WHAT WORKS IN PROGRAMMING

Meta-analysis has also been used to identify the programme elements that are most likely to have an impact on recidivism. A number of meta-analyses have shown similar results (Andrews et.al., 1990; Gendreau, Little & Goggin, 1996; Lipsey, 1995; Lösel, 1995), but the study by Andrews et al. (1990) illustrates the conclusions.

Andrews et al. (1990) reviewed 154 correctional treatment evaluation studies and classified the programmes they evaluated into one of four treatment groups:

(i)   Criminal sanctions studies in which there was a variation in the sentence, but no variation in the rehabilitation component. In these studies options comparing more vs. less probation, or probation vs. incarceration were compared to determine which produced lower recidivism.

(ii) Inappropriate correctional service not consistent with the risk/need principles. These studies provided intervention to low risk offenders, used non-directive relationship based or psychodynamic counselling. Other kinds of interventions included in this group were group counselling programmes that did not use prosocial modelling, non-directive educational and vocational programmes and programmes like scared straight, designed to discourage continued criminal activity by showing what prison is like.

(iii) Appropriate treatment options include delivery to higher risk offenders, behaviourally oriented interventions, have responsivity comparisons, and a small number of non-behavioural studies that addressed criminongenic needs.

(iv) Unspecified treatment was the fourth category and was used where the treatment was unspecified, or could not be classified as either appropriate or inappropriate.

The authors compared the recidivism results across the different programme types and the results of the analyses are summarized in Table 5. The effectiveness measure used was the Phi coefficient, a measure of association, in this case demonstrating the impact the programme type had on recidivism. A positive number indicates the programme decreased recidivism, while a negative number indicates the programme increased recidivism. As can be seen in Table 5, programmes that followed the risk/need principles and were structured and behavioural in content, have the highest Phi coefficient. Studies that evaluated the use of criminal sanctions or used programme elements that were described above as being inappropriate either had no effect, or increased recidivism.

Table 5. Type of Intervention and Impact on Recidivism

Type of treatment	Number of studies	Mean Phi
Appropriate	54	.30
Unspecified	32	.13
Inappropriate	38	-.06
Criminal sanctions	30	-.07

Summarizing the outcome of a number of meta analysis Gendreau (1996) has proposed a set of 8 principles of effective programme design:

(i)   The risk and need levels of offenders are specified and used in selection of participants and criminogenic needs are targeted.
(ii) Programmes are highly structured with content and contingencies under the control of the facilitators not the participants and antisocial attitudes are not reinforced.
(iii) Account for Responsivity of participants. For example, highly structured programmes are most appropriate for offenders who are not effective at conceptualising ideas; higher levels of interpersonal interaction for high anxiety offenders; and additional contingencies are put in place for offenders who have low motivation.

(iv) Offender characteristics are matched to staff including personal characteristics (gender, age, life experiences, training) and relationship styles (empathy, fairness, firmness, spontaneity).
(v) Positive reinforces outnumber punishers by a ratio of 4:1.
(vi) Intervention periods of 3 to 9 months are used since shorter periods do not provide sufficient time for relationships to develop and there is need for time in the treatment setting to practice interventions learned.
(vii) Programme staff are adequately trained with an understanding of the theory behind the intervention, they are provided with time to become experienced and familiar with the programme content before delivering it, and smaller programmes (number of locations where the programmes are being delivered) are often observed to be more effective.
(viii) Assessment and evaluation of the programme is on-going and integral to the programme so changes in behaviour and attitudes can be measured, skill development can be assessed and programme outcomes can be demonstrated.

In addition to these principles, Gendreau argues that the following components are important for successful interventions:

(i) Prosocial attitudes and behaviours are reinforced during treatment sessions.
(ii) Prosocial behaviours are modelled, or demonstrated, in treatment.
(iii) Role playing and practice of learned behaviours is needed.
(iv) Focus on skill development.
(v) Relapse prevention is included in the programme training.

In addition, to identifying the characteristics of effective interventions, Gendreau offers the following summary of interventions that are not effective with correctional populations.

(i) Programmes that rely on psychodynamic therapies requiring high levels of introspection, self evaluation and good verbal skills.
(ii) Nondirective therapies in which anti-social attitudes are not challenged and groups in which criminal attitudes and behaviours are reinforced.
(iii) Treatment strategies that rely on punishment such as "boot camp", intensive supervision and shock incarceration
(iv) Programmes that externalise blame, fail to develop empathy for the victims of crime and are directed at venting anger towards the system, or that only accept self-motivated offenders.
(v) Programmes that provide intensive services to low risk offenders.

A final point on the effectiveness of programming. A study recently completed for the Correctional Service (French & Gendreau, 2003) looked at the impact of correctional programming on offender behaviour while offenders were still in custody. For this study this meta analysis looked at research using intuitional incidents. Their findings demonstrate that with increased programme options institutional incidents decline. That is, with programming, correctional institutions become safer places.

VI. RESEARCH AND EVALUATION

A. Introduction
Determining what works and developing an evidence based correctional approach requires an understanding of research and its importance. Ideally, a correctional agency will have, at least, a small number of research staff who can carry out research projects and maintain knowledge of new and developing trends in the research world. Where research staff are not available, efforts are needed to build relationships with universities and colleges to encourage research in corrections that is consistent with local cultural and social norms.

B. Research Needs
Research requires the systematic collection of information, but this information can serve more than one purpose. Basic information on when offenders are admitted to an institution and when they leave can be useful for research. Assessment information for offenders may not only assist in ensuring services are

delivered appropriately, but can assist correctional management in planning and developing their correctional systems.

To conduct research on an intervention, it is necessary to know what is being evaluated. That is, it must be possible to describe the programme or intervention and the intervention must be applied consistently so all participants receive the same service. It is not possible to effectively evaluate programmes that are constantly changing since one will never know what is producing the observed results.

With knowledge about the offender population being studied it is possible to subset the population to look at how the intervention impacts different groups. Under the responsivity principle we would expect differential effects for subgroups of the population. Therefore, knowing the population allows one to determine who the programme works for. Examples of characteristics one might look at are age and gender, risk and need, type of crime committed and level of motivation.

The third requirement is for measures of outcome. Outcome measures are the things that you hope to change through the intervention. Early in the programme development cycle the behaviours that are being targeted for change should be clearly identified and these behaviours should be monitored. In correctional settings, the easiest behaviour to measure is recidivism. While this is often a relatively crude measure, it is the goal of most programming, to reduce the commission of new offences. Measuring recidivism then is a key element in evaluating correctional programmes.

However, waiting until recidivism occurs can take a long time and often estimates of the effectiveness of programmes are needed earlier. In addition, there is value in determining if there are immediate impacts of a programme on attitudes and behaviour, impacts that may be reduced over time. Intermediate measures of outcome can be very effective in understanding which parts of a programme or intervention are effective, and in new interventions, can identify problems early in the development process. Intermediate measures of outcome might include assessment of attitudes to determine if there was change, assessment of understanding and learning to determine if the information presented has been understood, and level of programme participation and programme performance.

For a correctional organization without a strong history of research support it can be challenging to convince senior managers of the value that research can provide. When resources are limited, and funds used to pay for research must be taken from programme funds it is easy to decide that research is an unnecessary luxury. However, research helps to answer fundamental questions, and can actually lead to increased efficiencies in the operation of the correctional system. Providing programming is expensive and knowing who it works best for, under what conditions and what intensity of programming is needed increases the probability that resources will be used in the most efficient manner.

Research helps to eliminate programmes and interventions that do not have an impact on the offender. Many interventions have little or not impact on offender behaviour, and yet are continued at great cost because management does not know the impact.

C. Measuring Recidivism
The effectiveness of a correctional intervention is frequently measured using recidivism. However, defining what is meant by recidivism is important as there are a number of factors that influence the rate of recidivism that is observed.

In the United States recidivism is often measured by using arrest information. This is available in a national database from their national police, but it must remembered that arrest does not mean conviction. Therefore, in the U.S., recidivism rates may appear higher than in other countries that use convictions as a measure of recidivism. In Canada, recidivism is usually measured in terms of convictions because the national police force maintains an extensive database containing all convictions for criminal offences. It is necessary when reading research reports, and when writing reports, to be clear about the type of measure being used to calculate recidivism.

Other factors that can affect the recidivism rate include the length of the follow-up period, the status of the offender during the follow-up period, and the types of offences included in the measurement of

recidivism. The length of the follow-up period is the most critical factor in studies that report recidivism rates. Short follow-up periods will often result in evaluations making a very weak programme look successful, as the offender has not had time to commit additional crimes, or more accurately, to be detected by official sources (the police) for having committed a new crime. For this reason, studies that report recidivism with a follow-up period of less than 6 months or less are not very useful. The minimum period of follow-up should be one year, and two years is much better. To determine the length of the follow-up period needed one must also consider the type of offender being studied. For example, sex offenders who have child victims must be followed for extended periods of time, as their recidivism generally takes longer to show in official records.

The status of the offender during the follow-up period is also important. An offender who is being supervised in the community on parole will be more likely to be detected for having committed new offences than one that is not being supervised. Therefore, studies using supervised and unsupervised offenders must be careful to correct for the different probabilities of detection.

Finally, there must be a determination of what types of offences will be included in the recidivism measure. Frequently, offences that receive fines only, or very short sentences (less than 30 days), are not included in follow-up data collection, particularly if the group being studied has in the past been convicted of serious offences. It is necessary to ask if conviction for a minor assault that results in 5 days in prison should be considered as a failure, or a slip that does not help to understand the problem being investigated.

Follow-up periods may be fixed or variable. Studies with fixed follow-up periods may include periods after the sentence has been completed. Variable follow-up periods are often used when a group of offenders with different release dates are used in a study, but the study must conclude on a particular date. The problem with variable follow-up periods is that those released last will have the shortest follow-up periods and therefore, will have lower recidivism rates. If the type of offender is associated with the time of release in the study and variable follow-up periods are used, then results could be biased.

Alternative measures of recidivism have been used in many studies such as return to custody and failure of conditional release. While these are not truly recidivism measures, as they do not require that a crime be committed, they are useful measures of criminal tendencies for research on programme outcome. It may be that keeping an offender in the community for an additional three or four months is a positive outcome. Return to custody as a measure of outcome is very simple to obtain with a correctional system where all admissions are recorded centrally. An alternative to return to custody is a measure of failure on conditional release such as parole. This outcome measure is intermediate, and may not result from new offending, but it does reflect a deterioration in behaviour in the community.

In research that is conducted by the Correctional Service a combination of measures of outcome are frequently used. The most basic measure is return to custody, and this provides information on how well the offender did after release. However, it is also useful to know if the return to custody occurred as a result of parole violation or as a result of a new criminal conviction, therefore we also collect this information. It is possible to refine the measure of recidivism by looking at the type of new offence, such as whether it was a new violent offence, or non-violent offence. Sometimes it is useful to know if the new offence is similar to previous offences or reflects a change in behaviour that may be indicative of positive outcomes.

Measuring recidivism as a percentage of offenders committing new offences in a fixed period of time is useful, but there are more effective measures that provide additional information. For example, survival analysis provides information on how long offenders remained in the community, the rate of failure over the full range of the follow-up period and it provides statistical tests for comparing different groups. How survival analysis helps is in the evaluation of a treatment programme can be seen in the following example. A programme is evaluated and the final recidivism rate is the same for both groups after two years. However, survival analysis might reveal that failures in the untreated group occurred mostly in the early part of the sentence; while for the treated group failure occurred in the latter part of the follow-up period. If one only looks at the overall rate it would appear that the intervention had no effect, but the survival analysis would reveal a very real effect, keeping some offenders out of prison for a longer period of time.

VII. SUMMARY AND CONCLUSION

Programmes that provide appropriate interventions to offenders can reduce the probability that they will return to prison. Programming that reduces recidivism also reduces the crime problem in our communities. Results of the research reviewed indicate that programmes that address criminogenic factors, those factors that have been shown through research to be associated with criminal behaviour, should be the targets of correctional programming. Substance abuse is one of the most important criminogenic factors. Programmes that are structured and well organized are more effective than those that are not and those programmes that take account of the offenders leaning needs, including cultural differences, will be more effective than those that do not. Programming that applies the risk/need responsivity principles will be more effective and more efficient than those that do not.

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