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NEW MEXICO.

# **Justice and Mental Health Collaboration Program Risk-Needs Framework Scores and New Bookings Alignment Review**

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January 2021

## **Introduction**

This brief report explores the correspondence of scores assigned to jail inmates by the Criminogenic Risk and Behavioral Health Needs Framework (hereafter, “risk-needs framework”) and recidivism risk. Recidivism risk is operationalized as higher numbers of new bookings into the Bernalillo County Metropolitan Detention Center (MDC) and longer lengths of stay following an initial arrest. The report also compares the ability of the risk-needs framework to predict future bookings and lengths of stay with that of an instrument designed solely to track risk of new criminal activity, the Proxy Risk to Recidivate Screener (hereafter, “Proxy”).

Investigating the alignment of the risk-needs framework scoring system with new bookings is one step in the broader evaluation of the Resource Reentry Center (RRC) and federally funded Justice and Mental Health Collaboration Program (JMHCP) in Bernalillo County. The program provides the RRC with boundary-spanning case managers who work with inmates recently released from custody. Managers help connect released inmates with the highest need to community-based behavioral health services to reduce their likelihood of reoffending.

## **Background**

Persons booked into MDC are administered a receiving screening form at intake. Among other questions, the form includes four validated screens used to measure three dimensions of risk: Proxy Risk to Recidivate Screener to measure criminogenic risk; Drug Abuse Screening Test (DAST-10) and Alcohol Use Disorders Identification Test-Consumptions (AUDIT-C) to measure substance use risk; and the Brief Jail Mental Health Screen (BJMHS) to measure mental illness risk. Responses to the screens correspond to a risk level of low, medium, or high on each dimension, and the dimension levels are combined to generate a score on the risk-needs framework ranging from 1 (lowest risk) to 8 (highest risk).

Responses to the four screens are initially used to flag inmates for later assessment and monitoring. They are also used to generate the risk-needs framework score to assist RRC staff in selecting individuals most in need of behavioral health services, including assignment to a boundary-spanning case manager. This use implies that the risk-needs framework is intended partly to measure recidivism risk. However, because the purpose of the framework has not been clearly articulated, exactly what the score created from the four screens is intended to measure or by what indicators is not known. If the framework score does measure recidivism risk as indicated by jail bookings, it is reasonable to expect higher scores to align with consistently greater likelihood of jail readmission and length of stay. This relationship has been demonstrated for other tools designed to assess or screen for risk (Wei & Parsons, 2012).

To serve as a benchmark of how well the risk-needs framework predicts these outcomes, this report compares the correspondence of the framework scores and new bookings with that of the Proxy tool, one of the validated screens included on the MDC screening form. The Proxy instrument assigns sub-scores to an arrestee’s current age (score of 0-2), age at first arrest (score of 1-3), and number of prior arrests (score of 1-3), which are summed to generate a risk score ranging from 2 through 8. Sub-scores are intended to be assigned to arrestees based on ranges that divide the population into equal thirds on each item, but the screening form currently in use at MDC applies pre-determined ranges that do not meet this specification. The Proxy is a tool specifically designed to pre-screen offenders for risk to reoffend as defined as a new booking before they are subjected to more lengthy risk assessments (Bogue et al., 2006).

## **Method**

To determine how well risk-needs framework and Proxy scores predicted future bookings and lengths of stay, we first specified a working sample of arrestees. The MDC screening form has been in use since February 1<sup>st</sup>, 2019 and data on screening form responses were available at the time of this writing through June 30<sup>th</sup>, 2020, so the arrestees in the sample are necessarily constrained to those with an arrival between these dates. We selected the earliest booking record for every individual released from MDC between July 1<sup>st</sup>, 2019 and October 31<sup>st</sup>, 2019, producing an initial sample of 7,157 persons. We selected arrestees based on their first releases rather than arrivals because selecting on arrivals could result in persons having no exposure time in the community during which to obtain new bookings if they were held in MDC through the entire timeframe the screening form was in use. Below we provide descriptive statistics on booking lengths of stay and examine length of stay by risk-needs framework score for this initial sample to determine whether higher scores are associated with longer lengths of stay at the time arrestees were initially screened.

Next, we narrowed the sample by removing arrestees whose booking had a release to the New Mexico Corrections Department (NMCD). A release to NMCD is typically part of a sentence being served by an inmate. These sentences are often more than a year in length and during this time the inmate is not in the community to reoffend. Applying this criterion removed 1,107 individuals, leading to a working sample of 6,050 arrestees. For this working sample we provide the percentage of persons with at least one readmission and describe summed lengths of stay by risk-needs framework and Proxy scores during a uniform period of eight months since arrestees' first release date. Eight months was chosen because this is the maximum amount of time in the community an arrestee could have if they were released by October 31<sup>st</sup>, 2019 and still be represented in the period covered by our data.

As noted in the Background, the MDC screening form uses pre-determined ranges to collect responses on each Proxy item before sub-scores are calculated. However, because the form collects raw data on date of birth and booking admission date, it is possible to calculate arrestees' current age and reassign sub-scores on this item. We therefore describe readmission rates and summed length of stay by Proxy scores both with the scores as currently calculated using pre-determined sub-score ranges (Unadjusted Proxy) and with scores where the current age sub-score applies categories that correctly divide the population into thirds (Adjusted Proxy). The population correctly divided into thirds by the new age categories represents all arrestees booked into MDC between February 2019 and June 2020. We are not able to correct the age at first arrest or number of prior arrests categories because we do not have raw data on these items, only self-report data in the form of the pre-determined Proxy ranges currently in use at MDC.

### **Initial Sample Length of Stay**

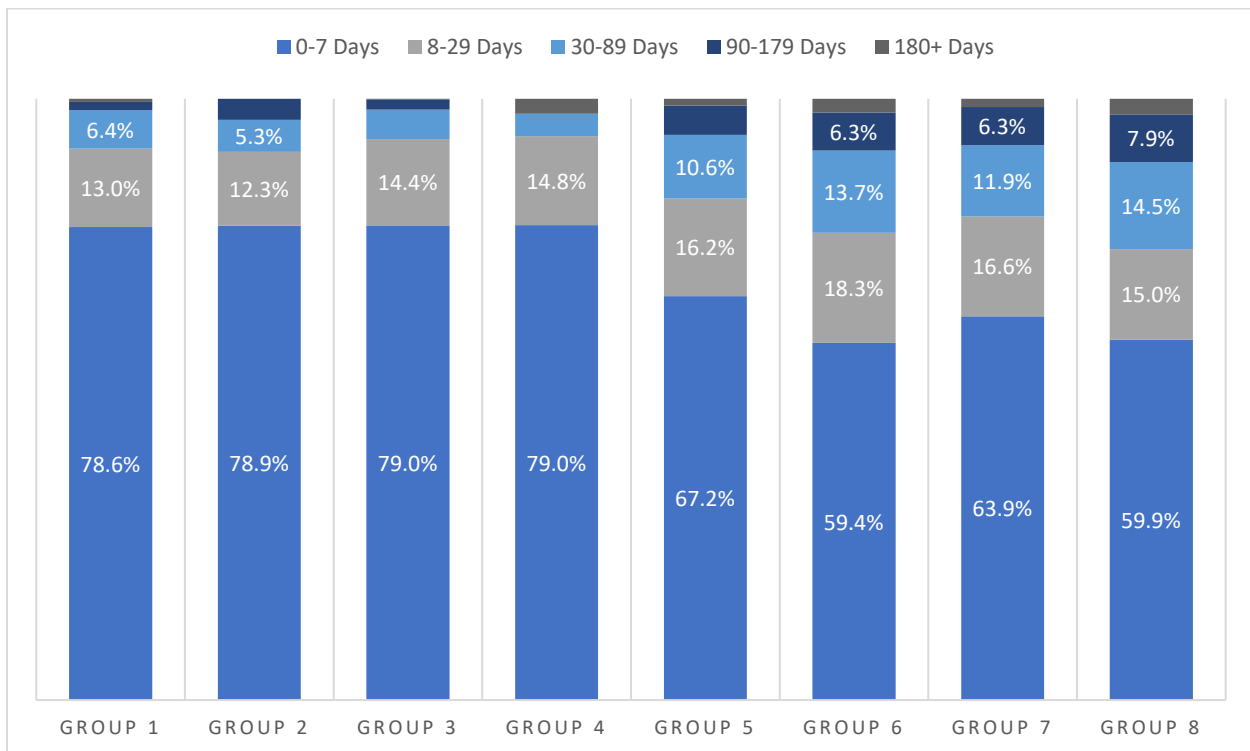
Descriptive statistics for length of stay and frequencies by length of stay category for the initial sample are presented in Table 1. Approximately 70% of the sample had lengths of stay lasting one week or less and over 90% had a length of stay less than a quarter year. The mean length of stay was 15.6 days, the median was 2 days, and the maximum was 266 days. Importantly, these descriptive statistics are affected by the condition that all arrestees in the initial sample could not have been admitted any earlier than February 1<sup>st</sup>, 2019, the date on which the screening form was implemented. The mean is thus biased toward shorter length of stays and the maximum is truncated to an unknown extent.

*Table 1. Length of Stay for Released Arrestees, July 2019 – October 2019*

Day Categories	Count	%
0-7 Days	5,018	70.1
8-29 Days	1,098	15.3
30-89 Days	671	9.4
90-179 Days	298	4.2
180+ Days	72	1.0
Total	7,157	100.0
Mean	15.6	
Median	2	
Minimum	0	
Maximum	266	

Percentage distributions of length of stay category by risk-needs framework score are presented in Figure 1 (for clarity of presentation, data labels are not shown if the values are less than 5%). There is some evidence that lengths of stay increase with increasing risk scores, as arrestees assigned a lower risk level are less likely to be represented among the greater length of stay categories. For example, persons in Groups 1 through 4 are anywhere from one-third to one-half as likely to be represented in the 30-89 Day range as those in Groups 5 through 8. However, higher risk scores do not align with consistently lesser or greater lengths of stay from score to score for any of the length of stay categories.

*Figure 1. Length of Stay for Released Arrestees, by Risk-Needs Framework Score*



Frequencies and descriptive statistics describing arrestees’ new bookings are presented in Table 2. More than 60% (3,702) of the working sample had no subsequent bookings during the eight-month period following their release. Another 22% had 1 new booking, 9% had 2 new bookings, and 4% had 3 new bookings. The approximately 3% remaining had between 4 and 21 new bookings. The average number of readmissions was 0.7.

*Table 2. Subsequent Bookings Following Arrestees’ Initial Release*

	Count	%
0	3,702	61.2
1	1,343	22.2
2	561	9.3
3	253	4.2
4	118	2.0
5	48	0.8
6	16	0.3
7	4	0.1
8	3	0.0
10	1	0.0
21	1	0.0
Total	6,050	100.0
Mean	0.7	
Median	0	

A total of 2,348 arrestees were readmitted at least once during the eight months following their initial release. Frequencies and descriptive statistics for length of stay summed across these individuals’ new bookings are presented in Table 3. (We replaced missing release dates for any person in custody beyond our period of data coverage with the date of June 30<sup>th</sup>, 2020, thus ensuring they had a “through the end of the period” total length of stay.) Almost 60% had a length of stay of less than one month, almost 80% had a length of stay less than 90 days, and about 90% had a length of stay lasting within six months. The remainder spent a total duration in jail lasting from 180 through 350 days. The mean length of stay was 53.6 days and the median was 18 days.

*Table 3. Total Length of Stay Over an Eight-Month Period Following Arrestees’ Initial Release*

Day Categories	Count	%
0-7 Days	888	37.8
8-29 Days	476	20.3
30-89 Days	459	19.5
90-179 Days	306	13.0
180+ Days	219	9.3
Total	2,348	100.0
Mean	53.6	
Median	18	
Minimum	0	
Maximum	350	

## Percentage Readmitted and Total Length of Stay

### *Readmission and Length of Stay by Risk-Needs Framework Scores*

The likelihood of jail readmission as measured by percentages of arrestees with at least one new booking are presented by risk-needs framework score in Figure 2. Risk groups represent scores assigned at the time of the booking for arrestees' first release. Readmission rates for Groups 1 through 4 are lower than those for Groups 5 through 8, but percentages do not consistently elevate across rising risk scores. The percentage point difference between Group 8 and Group 1 of 24.8% also fails to meet the minimum 30% difference between the failure rates for the lowest and highest risk groups recommended for valid risk assessment instruments (Johnson & Hardyman, 2004).

*Figure 2. Percentage of Arrestees Readmitted Within Eight Months, by Risk-Needs Framework Score*

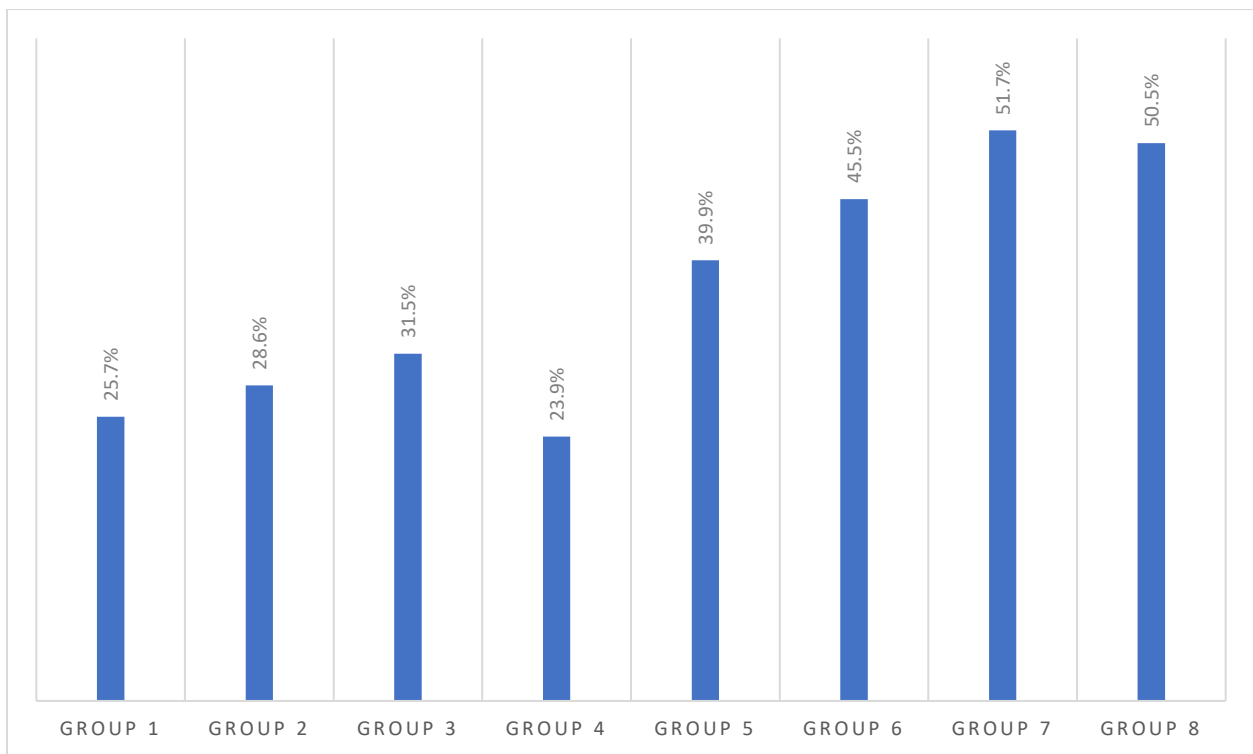
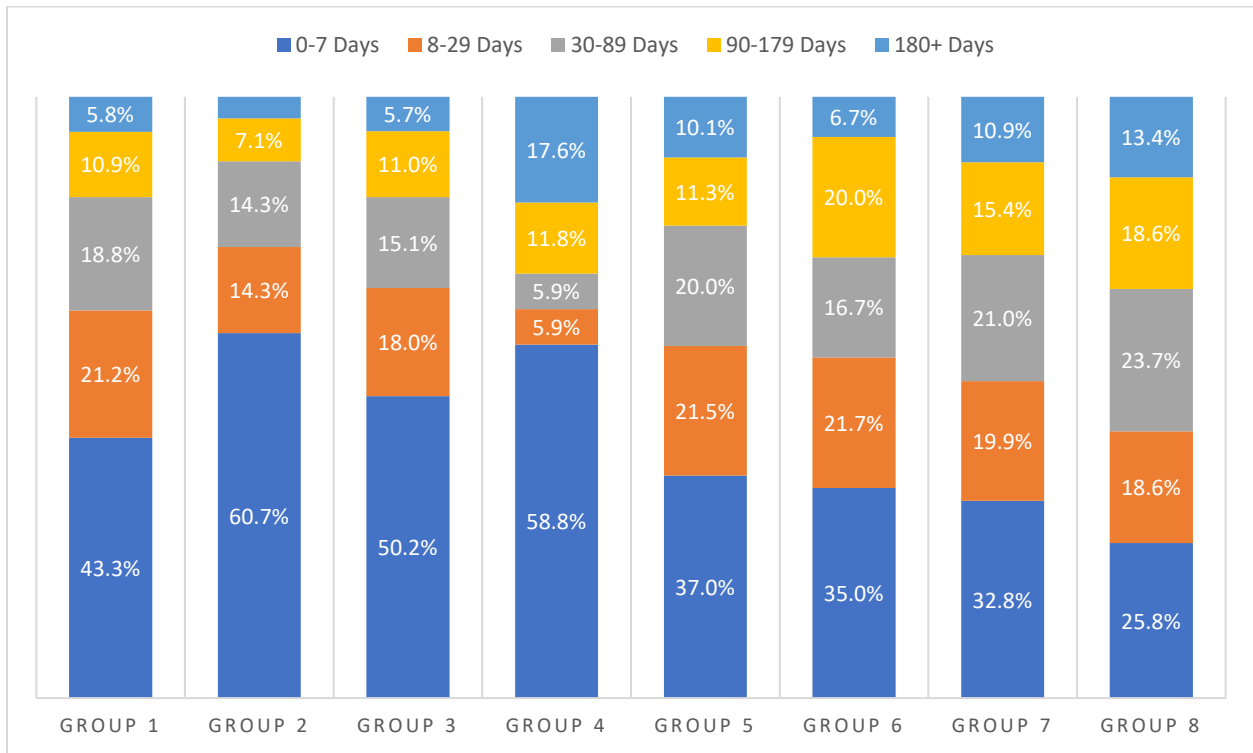


Figure 3 depicts percentage distributions of total length of stay categories for subsequent bookings by risk-needs framework score (data labels are not shown if the values are less than 5%). A higher percentage of arrestees fall within the 0-7 Day range when their risk score assigned at the time of their initial booking is between Groups 1 and 4 than when it is between Groups 5 and 8. Conversely, lower percentages of arrestees fall within the duration categories lasting longer than one week when their risk level is among the first four groups compared with the last four. Yet there is no length of stay category whose share of arrestees consistently increases or decreases across the eight risk groups.

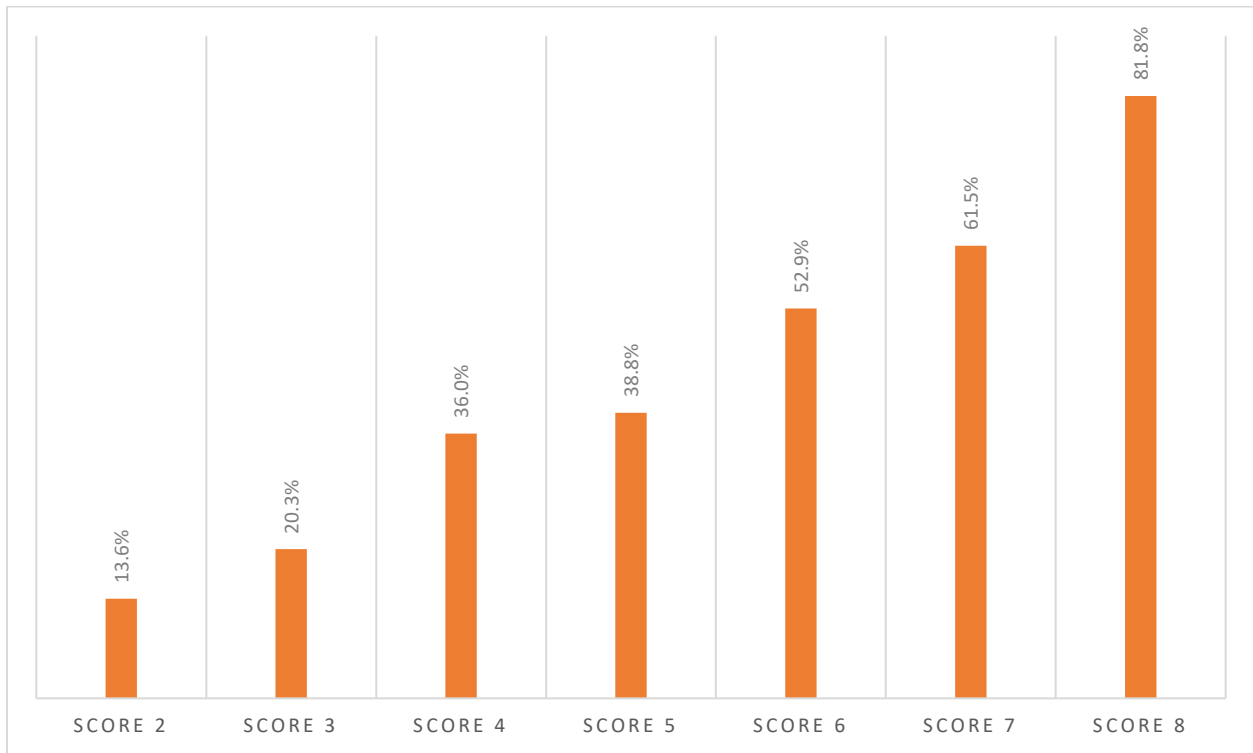
Figure 3. Total Length of Stay for Subsequent Bookings, by Risk-Needs Framework Score



*Readmission and Length of Stay by Unadjusted Proxy Scores*

Percentages of arrestees with at least one new booking by Unadjusted Proxy score are presented in Figure 4. Unlike with the risk-needs framework scores, percentages of arrestees readmitted rise continually across all seven scores, and the percentage point difference between the highest and lowest risk scores is well over 30%. However, there is some unevenness in the extent to which readmission rates increase from score to score. For example, the percentage of arrestees with a new booking increases by about 3% from Score 4 to 5 (from 36% to 38.8%), but by about 20% from Score 7 to 8 (from 61.5% to 81.8%). The readmission rate increases by a mean of 11% from score to score, with increases deviating by about 7% on average (i.e., the standard deviation).

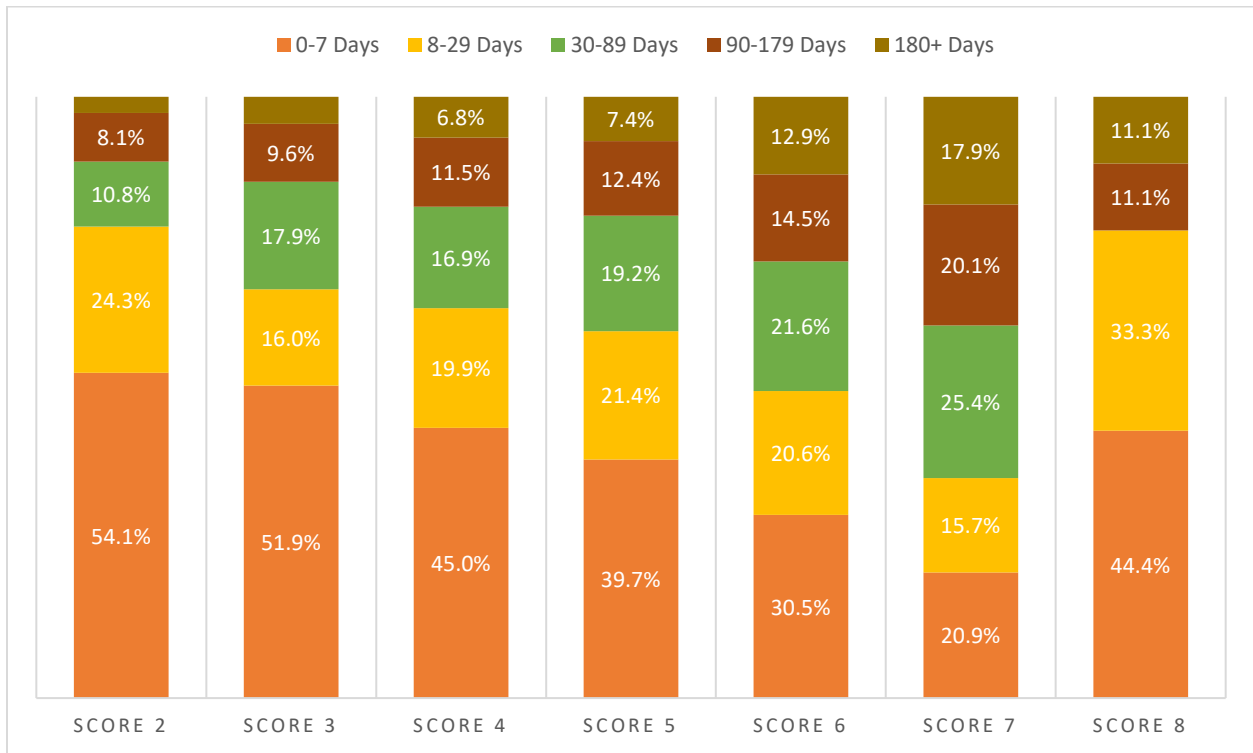
Figure 4. Percentage of Arrestees Readmitted Within Eight Months, by Unadjusted Proxy Score



Percentage distributions of total length of stay categories for subsequent bookings by Unadjusted Proxy Score are presented in Figure 5 (data labels are not shown if the values are less than 5%). The percentage of arrestees whose length of stay lasted one week or less consistently decreases across Scores 2 through 7. The percentages of arrestees whose incarceration lasted from three months to less than six months or more than six months consistently rose over the same scores. The percentage distribution of Score 8 breaks with these patterns since there were no arrestees with this score whose total duration in jail fell within the 30-89 Day range. The distributions of arrestees in the 8-29 Day and 30-89 Day ranges show less consistent changes over the Proxy scores.



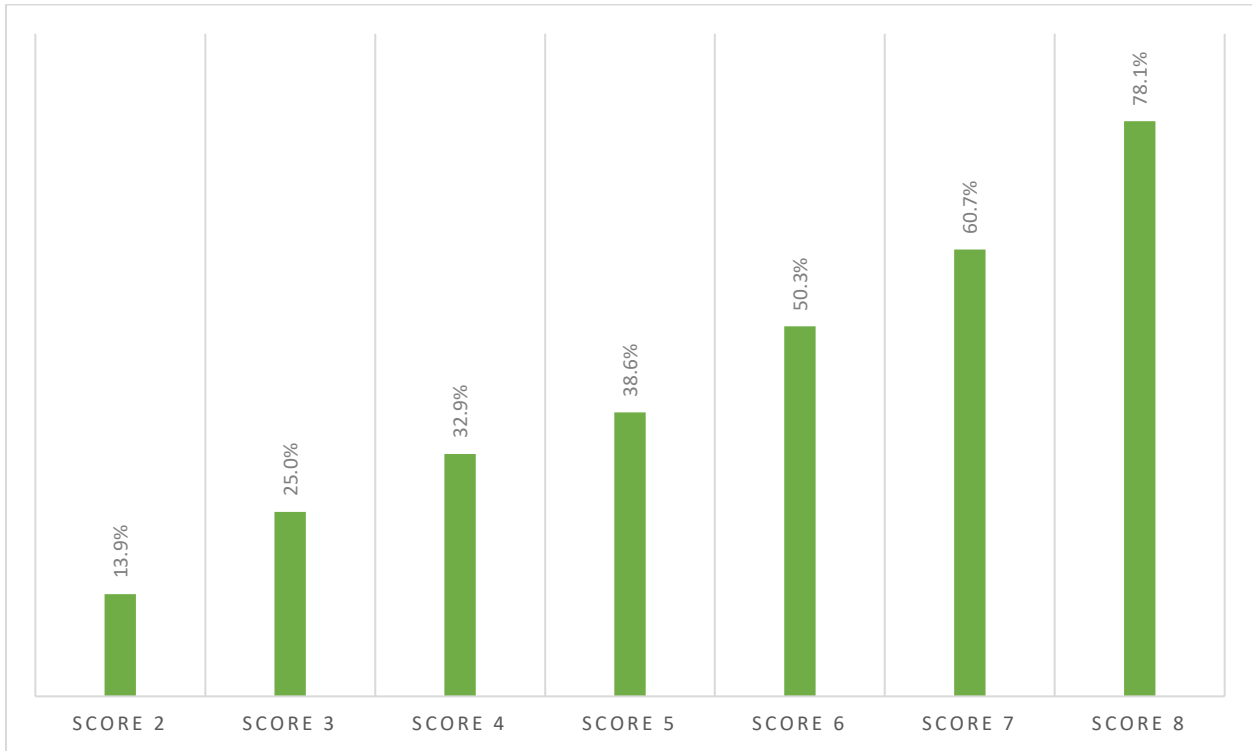
Figure 5. Total Length of Stay for Subsequent Bookings, by Unadjusted Proxy Score



*Readmission and Length of Stay by Adjusted Proxy Scores*

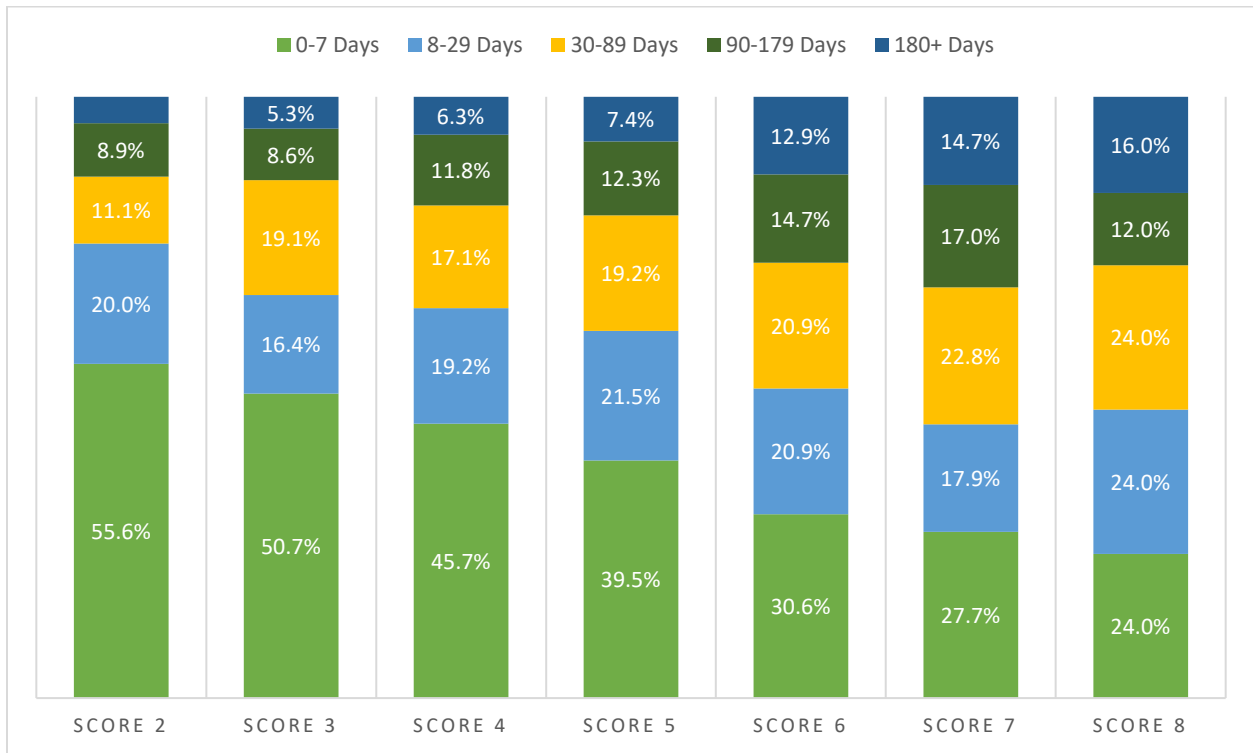
Percentages of arrestees with at least one new booking by Adjusted Proxy score are presented in Figure 6. Like the Unadjusted Proxy, the Adjusted Proxy scores show consistently elevating readmission rates across all seven scores and the percentage point difference between Scores 8 and 2 is greater than 30%. Readmission rate increases are also more even from score to score compared with the Unadjusted Proxy. The mean increase is again 11% but increases deviate from this mean by only 4% on average (i.e., the standard deviation).

Figure 6. Percentage of Arrestees Readmitted Within Eight Months, by Adjusted Proxy Score



Percentage distributions of total length of stay ranges for subsequent bookings by Adjusted Proxy Score are presented in Figure 7 (data labels are not shown if the values are less than 5%). Compared with the unadjusted scores, the scores based on the corrected current age categories align more closely with higher risk as measured by total length of stay across all seven values. The percentage for the 0-7 Day category consistently decreases, and the percentage for the 180+ Day category consistently increases, over all seven scores. The percentage for the 30-89 Day range rises over Scores 4 through 8, and the same is true for the 90-179 Day range over Scores 3 through 7. Only the percentage for the 8-29 Day range fails to rise or fall over at least five Adjusted Proxy Scores consecutively.

Figure 7. Total Length of Stay for Subsequent Bookings, by Adjusted Proxy Score



## Conclusion

As part of a broader evaluation of the Resource Reentry Center (RRC) and Justice and Mental Health Collaboration Program (JMHC) in Bernalillo County, this report investigated the alignment of scores on the Criminogenic Risk and Behavioral Health Needs Framework (“risk-needs framework”) and Proxy Risk to Recidivate Screener (“Proxy”) with the likelihood of subsequent arrests beyond an initial booking. What the risk-needs framework is intended to measure has never been clearly articulated, but its actual use at MDC implies it is intended at least partly to measure recidivism risk. If this risk is measured as a rearrest, it is reasonable to expect higher scores to align with consistently greater likelihood of jail readmission and length of stay (Wei & Parsons, 2012). The Proxy, one of the validated screens that makes up the risk-needs framework, is designed to pre-screen offenders for risk to reoffend as defined by a new booking before they take part in more lengthy risk assessments (Bogue et al., 2006).

Analysis of jail readmission and total length of stay for more than 6,000 jail inmates originally released between July and October 2019 revealed that higher scores on the risk-needs framework do not associate with higher readmission rates in a consistent fashion. The difference in readmission likelihood between arrestees with the highest and lowest scores is small compared with the minimum threshold recommended for risk assessment instruments (Johnson & Hardyman, 2004). Although arrestees with higher scores generally have longer lengths of stay than those with lower scores, higher scores on the risk-needs framework are not predictably associated with changes in length of stay. In contrast, scores on the Proxy correspond to consistent increases in readmission likelihood and the risk difference between the highest and lowest scores is sizeable. When adjusted so that the categories on the “current

age” item of the Proxy correctly divide the population into thirds, the Proxy scores also correspond to consistent and even increases in readmission risk. Additionally, scores on the Adjusted Proxy aligned the most closely with regular increases in jail length of stay.

Consequently, if the goal of the risk-needs framework is at least partly to predict recidivism risk as defined by a new booking, the Proxy should be used in lieu of the full framework to screen arrestees’ risk to reoffend. We also recommend the collection and verification of raw data on arrestees’ age at first arrest and number of prior arrests so that Proxy categories for these measures can be appropriately adjusted alongside the current age item. These changes would improve the capacity of the information currently being collected at MDC to predict recidivism risk. More critically, the purpose of the score that is created from the four validated screens should be clearly stated. This purpose should guide what the score is intended to measure and by what indicators, which would facilitate evaluation of the framework and the JMHCP broadly.

## References

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