

UNDER SURVEILLANCE: AN EMPIRICAL
TEST OF THE EFFECTIVENESS AND
CONSEQUENCES OF ELECTRONIC
MONITORING

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FINDINGS

TABLE 2. OFFENDER SERIOUSNESS AND LEVEL OF CONTROL—PERCENTAGES AND MEAN VALUES FOR OFFENDERS WITH AN ORIGINAL SENTENCE TO HOME CONFINEMENT

	No Electronic Monitoring	Electronic Monitoring		
		Total EM	Radio Frequency	GPS
Primary offense was violent	19.4%	38.7%*	30.9%	53.8%**
Scored to prison under sentencing guidelines	30.1%	46.2%*	41.8%	54.6%**
Scored to prison for primary offense only	21.0%	38.5%*	33.3%	48.5%**
Mean sentencing guidelines points for primary offense	36.5	59.7*	49.7	79.0**
Mean total sentencing guidelines points	42.4	64.4*	54.3	83.8**
N	45,475	3,347	2,203	1,144

*Difference between EM and No EM (RF and GPS combined) is statistically significant ($p < 0.001$).

**Difference between RF and GPS is statistically significant ($p < 0.001$).

Table 2 presents the results of an analysis comparing the relative “risk” of EM offenders and offenders sentenced to home confinement without EM as indicated by the nature of their primary offense (violent vs. not violent) and their calculated sentencing guidelines scores. Specifically, the sentencing guidelines score sheet data are used in four different ways to measure the level of risk: whether offenders scored to a recommended prison sentence (total points of 45 or greater), whether the primary offense points alone resulted in a recommended prison sentence, the mean points for the primary offense, and the mean total guidelines points.

The comparisons of risk, or seriousness, levels for home confinement offenders with and without EM in Table 2 show that for all five measures, EM offenders have statistically significant ($p < 0.001$) higher levels than those for offenders not on EM. Additionally, offenders on the higher level surveillance EM modality of GPS have risk levels significantly higher ($p < 0.001$) than those under the less controlling RF monitoring mechanism on all five risk measures. Specifically, EM offenders are more likely to have committed a violent offense and more likely to have “scored” to prison, and their mean sentencing guidelines points scores, in terms of the total points and points for the primary offense alone, are significantly higher than those for offenders sentenced to home confinement without EM ($p < 0.001$).

Whether these offenders would have received a sentence to prison in the absence of the EM alternative is impossible to determine using secondary data. However, these findings do indicate that offenders on EM are, on average, more serious offenders, and their perceived risk to the community makes them more likely than offenders not on EM to be sentenced to prison in the absence of the EM alternative. Additionally, offenders sentenced to supervision under the enhanced level of offender control through GPS instead of RF are clearly more serious offenders and considered more of a risk to public safety.

TABLE 3. OFFENDER SERIOUSNESS AND LEVEL OF CONTROL—PERCENTAGES AND MEAN VALUES BY PRIMARY OFFENSE CATEGORY

	No Electronic Monitoring	Total EM	RF	GPS
<i>Primary Offense = Violent</i>				
Scored to prison under sentencing guidelines	58.5%	72.7%*	69.3%	76.6%**
Scored to prison for primary offense only	50.3%	68.2%*	64.1%	72.7%**
Mean sentencing guidelines points for primary offense	62.5	100.0*	85.6	116.0
Mean total sentencing guidelines points	66.6	103.1*	88.3	119.4**
N	8,798	1,295	680	615
<i>Primary Offense = Property</i>				
Scored to prison under sentencing guidelines	28.0%	38.9%*	39.9%	36.2%
Scored to prison for primary offense only	21.0%	31.4%*	32.2%	29.4%
Mean sentencing guidelines points for primary offense	33.4	41.3*	41.2	41.5
Mean total sentencing guidelines points	39.0	46.3*	45.7	47.7
N	13,771	831	596	235
<i>Primary Offense = Drug</i>				
Scored to prison under sentencing guidelines	21.0%	23.5%	23.4%	23.6%
Scored to prison for primary offense only	10.3%	12.7%*	12.2%	14.1%
Mean sentencing guidelines points for primary offense	30.2	32.0*	31.4	33.7
Mean total sentencing guidelines points	36.3	37.4	36.7	39.4
N	17,038	844	624	220

*Difference between No EM and EM (RF and GPS combined) is statistically significant at $p < 0.001$.

**Difference between RF and GPS is statistically significant $p < 0.001$.

To further address the issue of whether EM is, in fact, an alternative to prison at the “front-end” of the sentencing process, Table 3 presents the same four sentencing guidelines indicators of the seriousness of the offender’s current and past criminal actions, separately, within each of three primary offense categories (violent, property, and drug). Within the

violent and property crime categories, the results are similar to those reported in Table 2 for all offenders. Specifically, offenders on home confinement with EM of either type exhibit significantly higher risk scores on all four of the sentencing guidelines measures ($p < 0.001$). However, mixed results are found in comparisons of those offenders monitored under GPS versus RF. For violent offenders, GPS offenders are found to be significantly more serious and pose a greater risk to the community ($p < 0.001$) than those under RF surveillance for the same four measures as for all offenders combined. For property offenders, however, the differences virtually disappear, indicating no greater risk to the community from offenders placed on the more intensive GPS monitoring than from those placed on RF monitoring.

For drug offenders, the picture is slightly different when comparing EM with non-EM offenders and RF with GPS offenders. Although drug offenders on EM are significantly more likely to have scored to prison for their primary offense and to have higher mean sentencing guidelines points for their primary offense, the differences disappear when the total sentencing points are compared. Furthermore, regardless of statistical significance, differences for all four measures are considerably smaller for drug offenders than for violent or property offenders, both for EM vs. non-EM offenders and RF vs. GPS offenders.

This analysis of the differences in risk levels, or offender seriousness, between offenders on home confinement with and without EM and between those on RF versus the more intrusive GPS provides no clear evidence that, overall, the decision to monitor offenders on home confinement with enhanced electronic control mechanisms results in “front-end” net-widening. In other words, offenders sentenced to home confinement with EM seem to have posed a significantly higher risk to public safety and would have had a higher likelihood of receiving a prison sentence if not for the availability of EM as an enhanced control mechanism. However, possible “front-end” net-widening for drug offenders is suggested by findings that show that non-EM drug offenders exhibit almost equivalent levels of risk to the public as those placed on the more controlling EM program.

Although the question of “front-end” net-widening remains somewhat elusive, relying on proxies to indicate the likelihood of a sentence to prison in the absence of qualitative data on judicial decision making, the question of “back-end” net-widening is more easily addressed and answered. With the introduction of intermediate sanctions into the continuum of punishment alternatives came the concern that these more intensive forms of community supervision, with their stricter conditions and closer surveillance, would increase the likelihood of an offender violating

those conditions and getting caught doing so. The fact that EM of offenders on home confinement constitutes the last option before prison, it seems likely that a violation while on EM would result in a sentence to prison, therefore, widening the net.

Table 4 presents the results of the proportional-hazards regression modeling of the likelihood of revocation for a technical violation within two years (104 weeks) of the first day of placement on home confinement for the 75,661 offender placements in our sample.⁴ The parameter estimates tell us the direction of the effect of the independent and control variables on the likelihood of revocation and whether those effects are statistically significant. The hazard ratios indicate the relative likelihood of revocation and time to revocation across categories or values of the independent and control variables. These ratios can be converted to percentage differences with the formula: $(1 - \text{Hazard Ratio}) * 100$.

TABLE 4. PROPORTIONAL-HAZARDS MODEL RESULTS FOR LIKELIHOOD OF REVOCATION FOR A TECHNICAL VIOLATION

Variables	Total Sample		Violent Offenders		Property Offenders		Drug Offenders	
	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio
RF monitoring	-3.135***	0.043	-3.430***	0.032	-2.905***	0.055	-3.268***	0.038
GPS monitoring	-2.322***	0.098	-2.444***	0.087	-2.549***	0.078	-1.875***	0.153
<i>z-score for difference in coefficients</i>		2.962***		2.052**		0.637		2.501**
Murder	-0.492***	0.612						
Sex offense	-0.004	0.996						
Robbery	-0.057	0.944						
Other violent	-0.154***	0.857						
Weapons offense	-0.168***	0.846						
Other offense	-0.139***	0.870						
N		74,276		16,586		22,801		25,885

NOTE: Models shown include all offender demographic and prior record variables, as well as current term of supervision control variables, as displayed in Table 1.

** $p < 0.01$.

*** $p < 0.001$.

4. Due to space limitations, the full models, including all the control variables presented in Table 1, are not presented in Tables 4, 5, and 6, and only the variables of interest are displayed. The results of the full models are available from the authors.

Unlike previous findings of a “surveillance” effect, our findings indicate that offenders on EM are *less* likely to be revoked for a technical violation. In fact, and surprisingly, offenders on RF monitoring are 95.7% less likely and offenders on GPS monitoring are 90.2% less likely than offenders on home confinement without EM to be revoked for a technical violation. However, the difference in the magnitude of these effects is statistically significant (z -score = 2.962), which partially supports the “surveillance effect” hypothesis, in that offenders on the more intense form of electronic surveillance are more likely than those on the less intense form to get caught violating the conditions of their home confinement sentence. Secondly, these findings show that the prohibitory effect of EM on technically violating holds true for offenders in all three primary offense categories and has virtually the same degree of effect across the three categories. This finding is of particular significance given that EM is used at a considerably higher rate for violent offenders (12.3%, compared with 5.7% and 4.7% for property and drug offenders, respectively) and that violent offenders are significantly less likely than property and drug offenders (the reference category) to be revoked for a technical violation, whether they are placed on EM.

Although one set of concerns related to the addition of EM to home confinement sentences is that it will widen the net of control, another set of concerns has to do with public safety and the effectiveness of EM in deterring or incapacitating offenders living in the community. Table 5 presents the results of the proportional-hazards regression modeling of the likelihood of revocation for a new offense, our primary measure of risk to public safety, and Table 6 presents those same results for the likelihood of absconding from supervision, a second measure of offender risk to public safety.

For both outcomes, the results show that EM significantly reduces the likelihood of failure and that the degree to which that likelihood is reduced is about the same for revocation for a new offense and absconding. For the total sample of offenders, the hazard ratio of 0.053 for both forms of EM and revocation for a new offense indicates a 94.7% reduction in the likelihood of revocation for offenders on RF or GPS versus no form of electronic surveillance. For violent, property, and drug offenders, the percent reduction ranges from 89.8 to 98.1 for RF and from 91.4 to 95.5 for GPS (note that within the category of drug offenders, too few offenders were placed on GPS monitoring and committed a new offense to produce a valid parameter estimate). Although these figures indicate that RF monitoring is slightly more effective than GPS monitoring and slightly more effective for violent than for property or drug offenders, the overall range in the rate of reduction for EM versus no EM is very small. Where public

TABLE 5. PROPORTIONAL-HAZARDS MODEL RESULTS FOR LIKELIHOOD OF REVOCATION FOR A NEW OFFENSE

Variables	Total Sample		Violent Offenders		Property Offenders		Drug Offenders	
	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio
RF monitoring	-2.933***	0.053	-3.947***	0.019	-2.283	0.102	-3.146***	0.043
GPS monitoring	-2.929***	0.053	-2.461***	0.085	-3.097**	0.045	-15.150+	0.000
<i>z-score for difference in coefficients</i>	0.007		1.327		0.753		0.024	
Murder	-0.882***	0.414						
Sex offense	-0.593***	0.552						
Robbery	-0.089	0.915						
Other violent	-0.223***	0.800						
Burglary	-0.003	0.997						
Other property	0.073*	1.076						
Weapons offense	-0.177*	0.838						
Other offense	0.114**	1.121						
	74,276		16,586		22,801		25,885	

NOTE: Models shown include all offender demographic and prior record variables, as well as current term of supervision control variables, as displayed in Table 1.

+ Too few cases to produce a valid parameter estimate.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

safety is concerned, either form of electronic surveillance seems to significantly reduce the likelihood of reoffending for all three "types" of offender.

Absconding from supervision is an outcome measure that has not, to date, been addressed in the literature on EM and home confinement. However, its implications for public safety and the relative frequency of its occurrence suggest that absconding and the potential for EM to reduce the rate of absconding should be considered in any test of the effectiveness of EM. As of December 30, 2004, more than 40,000 of the 114,891 offenders on community supervision in Florida were classified as absconders, their "whereabouts unknown" (FDOC, 2005). In our sample of 75,661 offenders on home confinement, 11,857 (15.7%) absconded from supervision at some point within two years of placement, and 1,911 (16.1%) of those absconders were subsequently revoked for a new offense. This rate of reoffending is considerably higher than that for the offenders who did not

TABLE 6. PROPORTIONAL-HAZARDS MODEL RESULTS FOR LIKELIHOOD OF ABSCONDING

Variables	Total Sample		Violent Offenders		Property Offenders		Drug Offenders	
	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio	Parameter Estimate	Hazard Ratio
RF monitoring	-2.426**	0.088	-3.149**	0.043	-1.869**	0.154	-2.571**	0.076
GPS monitoring	-2.325**	0.098	-2.432**	0.088	-1.899**	0.150	-2.203*	0.111
<i>z-score for difference in coefficients</i>	0.260		0.855		0.051		0.424	
Murder	-1.247*	0.287						
Sex offense	-0.538*	0.584						
Robbery	-0.198*	0.821						
Other violent	-0.289*	0.749						
Burglary	0.012	1.012						
Other property	-0.045	0.956						
Weapons offense	-0.497*	0.608						
Other offense	-0.198*	0.820						
N	74,276		16,586		22,801		25,885	

NOTE: Models shown include all offender demographic and prior record variables, as well as current term of supervision control variables, as displayed in Table 1.

* $p < 0.01$.

** $p < 0.001$.

abscond (9.8%) and indicates an increased risk to public safety of offenders who escape surveillance. The results presented in Table 6 indicate that EM also has a prohibitive effect on the likelihood of absconding, with statistically significant parameter estimates and hazard ratios of 0.088 and 0.098 for RF and GPS monitoring, respectively. Again, this effect is the same for both types of EM (z -score for difference in coefficients is 0.260) and varies only slightly for the three categories of primary offense type.

These findings consistently demonstrate that either form of EM significantly reduces the risk to public safety from offenders living in the community. Moreover, our findings for the effect of EM on the likelihood of revocation for a technical violation indicate that rather than widening the net of penal control, the addition of electronic surveillance to a home confinement sentence may actually reduce the probability of eventual imprisonment and, therefore, effectively serve as a useful alternative sanction. Notwithstanding the limitations of using official data to represent the complex circumstances of offenders serving a sentence to home confinement and the complexities of officer discretion and judicial decision making,

these findings suggest that the dual goals of reducing the number of admissions to prison while protecting public safety may, in fact, be achieved via the introduction of newer and more refined means of offender surveillance.