Objective: Although studies reveal substantial mental health treatment needs among youths in the juvenile justice system, far less is known about young offenders transferred to adult criminal court. This statewide study examined the mental health needs of young offenders who committed serious crimes and were transferred to adult court and subsequently incarcerated in a prison for adults. Methods: Sixty-four boys aged 16 and 17 years who were incarcerated in the Texas adult correctional system completed the Massachusetts Youth Screening Instrument–Version 2 (MAYSI-2), a mental health screening measure widely used in the juvenile justice system. Scores from the youths in adult prison were compared with those of a matched sample of youths in juvenile correctional facilities, drawn from the MAYSI-2 normative data. Results: Youths in adult prison reported substantial symptoms of mental health problems. Most youths surveyed (51%) scored above the highest clinical cutoff (the “warning” range) on at least one MAYSI-2 subscale. For every clinical subscale except suicide ideation, the majority of youths (54% to 70%, depending on the subscale) scored above the “caution” range. Juveniles in adult prison reported higher rates of symptoms than did those in juvenile correctional facilities (effect sizes ranged from d=.18 to d=.65, depending on the subscale). Conclusions: Although the mental health needs of youths in the juvenile justice system are well documented, this study reveals that mental health treatment needs appear to be even more pronounced in the small subgroup of youths transferred to the adult criminal justice system and incarcerated in adult prison. (Psychiatric Services 60:1092–1097, 2009)

Most youths in the juvenile justice system show symptoms of mental health problems. Over the past decade, studies using a structured diagnostic interview revealed that more than 60% of youths in juvenile detention met criteria for at least one psychiatric disorder (1) and that around 50% met criteria for at least two disorders (2). Recent research examining youths who had been incarcerated for nine months revealed even higher rates, with 88% of males and 92% of females meeting criteria for at least one disorder (3). Studies using the Massachusetts Youth Screening Instrument–Version 2 (MAYSI-2) (4)—a measure designed to identify self-reported symptoms of mental health problems, rather than formal diagnoses—also suggest that mental health problems are commonplace within the juvenile justice system. In a national sample of over 70,000 youths in the juvenile justice system (including youths in intake probation, detention, and correctional facilities), 72% of girls and 63% of boys scored above the clinical cutoff on at least one MAYSI-2 subscale (5).

As clinicians and policy makers have become more aware of mental health needs in the juvenile justice system, practice and policy have changed. For example, the federal government published guidance to help juvenile justice agencies screen for or assess mental health symptoms (6–8), and at least 42 states screen for mental health problems using the MAYSI-2 at some point of entry to the juvenile justice system (9).

Despite increased research and policy addressing mental health needs among youths in the juvenile justice system, there remains one important subgroup of young offenders about whom we know little. No published research has studied juveniles incarcerated in adult prisons to identify their mental health symptoms or gauge their treatment needs.

For decades, the law has allowed juvenile courts to select a few juveniles for waiver, where they face trial in adult criminal court and might be sentenced to adult prisons. In Kent v. United States (10), the Supreme Court...
suggested specific factors that courts should consider when selecting which youths warranted waiver to adult court (for example, the nature of alleged offenses, sophistication or maturity of the juvenile, and potential for rehabilitation). Nearly all states allow for this type of judicial waiver (11). However, after the increases in juvenile crime during the late 1980s and early 1990s, most states amended their criminal codes so that youths could more easily be tried in adult courts and sentenced to adult prisons (12). Now, many more youths are eligible for adult criminal sentences simply because of their age or the category of crime that they committed. Consequently, the number of juvenile inmates in adult prisons more than doubled between the mid-1980s and the mid-1990s (13).

Given policy changes that moved more juvenile offenders to adult courts, it seems important to ask whether youths incarcerated in adult prisons have mental health treatment needs similar to those of youths in the juvenile justice system (14). Unfortunately, we have few data to answer this question. The available data regarding mental health needs among juveniles in adult prisons involves isolated reports from advocacy groups. For example, reports suggest that juveniles in adult prisons are more likely to commit suicide than youths in the juvenile justice system (15) and that they are more vulnerable to rape and physical assaults than their adult counterparts (16). Although these observations have profound treatment and safety implications, a comprehensive plan for providing psychiatric treatment to juveniles in adult prisons will also require more specific data regarding the actual psychiatric symptoms that these juveniles report.

As a first step in identifying the treatment needs among juveniles in adult prisons, we administered the MAYSI-2 (4) to boys incarcerated in the adult correctional system in one state. We used the MAYSI-2 because it is the most widely used measure of mental health symptoms among delinquent youths. Thus the measure provides a common metric to compare our sample of juveniles in an adult prison to national samples of youths in the juvenile justice system. To facilitate this comparison, we present MAYSI-2 scores from our sample of boys incarcerated in the adult correctional system alongside scores from a subsample of boys in juvenile correctional facilities drawn from the national normative data for the MAYSI-2 (5) and matched for age range, race, and ethnicity. Although the MAYSI-2 norms also include youths from other points in the juvenile justice system (that is, probation and detention), we selected only sentenced, incarcerated youths to use as a comparison. We assumed that these incarcerated youth—likely convicted of more serious or persistent crime—would be the most similar to juveniles in adult prisons.

Methods
Participants
Participants were 64 boys aged 16 (N=9, 14%) or 17 (N=55, 86%) in a youthful offender program within a large adult prison. These boys were a subset of a larger study of 149 youthful offenders who had been convicted of crimes in Texas criminal courts and sentenced to adult prison in Texas when they were between the ages of 13 and 17. Because the primary study measure, the MAYSI-2, was not normed for individuals older than 17, we present data only for the participants under age 18, whose results we can compare to MAYSI-2 normative data. At the time of data collection, no inmate in our sample was younger than 16.

Regarding race and ethnicity, of the 64 boys, eight (13%) self-identified as white, 28 (44%) as African American, 20 (31%) as Hispanic, and one (2%) as “other” race. The remaining seven (11%) declined to report their ethnicity. Because the Texas Department of Criminal Justice maintains a Youthful Offender Program in which juveniles are offered classes and group treatment sessions separately from older offenders, all boys resided in the same correctional unit. Although a few girls have been sentenced to the adult correctional system in Texas, they reside in a separate unit for women and were not a part of this study.

The comparison sample was taken from the MAYSI-2 national normative data (4.5), an archival data set of over 70,000 cases obtained from juvenile justice programs in 19 states. In order to construct a reasonably matched comparison sample, we initially extracted the 9,244 cases of males aged 16 or 17 (mean±SD age, 16.90±5.9 years) from juvenile, secure correctional facilities (that is, long-term facilities in which youths are incarcerated to serve their sentences; this sample did not include youths in detention facilities awaiting trial). The racial and ethnic breakdown of this initial comparison sample featured approximately equal proportions of white, African-American, and Hispanic youths. Therefore, we randomly extracted from the sample data for white and Hispanic youths until we achieved a sample that was more similar, in terms of racial and ethnic composition, to our sample of juveniles in adult prison. The final comparison group from the MAYSI-2 national normative data set included 6,071 males, of whom 702 (12%) were white, 2,827 (47%) were African American, 1,900 (31%) were Hispanic, and 642 (11%) were other or unknown race. These comparison data came from 51 secure correctional facilities in 12 states (including Texas).

Measures
The MAYSI-2 is the most widely used and best validated mental health screening measure for youths involved in the criminal justice system (17). Designed for youths aged 12–17, it can be administered by non-clinical criminal justice professionals (4). Youths who complete the brief screening measure mark “yes” or “no” to indicate whether they have experienced each of 52 items that reflect symptoms or behaviors related to mental health or substance abuse problems within the past few months. The MAYSI-2 was not designed to provide psychiatric diagnoses per se but to identify youths experiencing emotional distress or problematic behaviors that are of particular concern to criminal justice or correctional facilities (17). These areas of concern correspond to seven MAYSI-2 subscales: alcohol/drug use, angry-irritable, depressed-anxious, somatic com-
TABLE 1
Mean scores on the subscales of the Massachusetts Youth Screening Instrument–Version 2 (MAYSI-2) for youths in adult prison and youths in juvenile correctional facilities

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Adult prison (N=64)</th>
<th>Juvenile correction facility (N=6,044)</th>
<th>Effect size (Cohen’s d)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Alcohol/drug usec</td>
<td>3.76</td>
<td>2.44</td>
<td>3.31</td>
</tr>
<tr>
<td>Angry-irritatedd</td>
<td>5.02</td>
<td>2.92</td>
<td>3.19</td>
</tr>
<tr>
<td>Depressed-anxiousd</td>
<td>3.15</td>
<td>2.14</td>
<td>2.29</td>
</tr>
<tr>
<td>Somatic complaintsd</td>
<td>2.62</td>
<td>1.94</td>
<td>2.08</td>
</tr>
<tr>
<td>Suicide ideationd</td>
<td>1.25</td>
<td>1.63</td>
<td>.56</td>
</tr>
<tr>
<td>Thought disturbance (for boys only)f</td>
<td>1.25</td>
<td>1.24</td>
<td>.79</td>
</tr>
</tbody>
</table>

a Juveniles in adult prison were study participants. Juveniles in juvenile correctional facilities were a comparison group drawn from MAYSI-2 normative data. The comparison group was matched to the study group for age and racial-ethnic composition.
b NS range from 6,010 to 6,044.
c Possible scores range from 0 to 8, with higher scores indicating a higher level of the reported symptom.
d Possible scores range from 0 to 9, with higher scores indicating a higher level of the reported symptom.

Procedure
After the relevant institutional approvals, staff from the research department of the state correctional system administered the paper-and-pencil version of the MAYSI-2 to participants during the spring of 2006. Staff explained the purpose of the study to youths in general terms, describing it as a voluntary survey of youths’ concerns, feelings, and experiences (youths received no compensation or incentive for participation). Staff obtained informed assent from youths (parental consent was not feasible), clarified the anonymous nature of the survey, and sealed survey materials in a manner to protect anonymity. Although 65 youths surveyed agreed to participate, one returned an incomplete protocol, which was not used in study analyses and gave us a sample of 64 participants.

Results
Table 1 presents mean scores on the MAYSI-2 subscales for the study participants and the comparison sample. As detailed in Table 1, youths in adult prison had higher mean scores—that is, greater distress or treatment needs—across every subscale on the MAYSI-2 than did the comparison group in juvenile correctional facilities. These differences in scores ranged from small to medium-large based on Cohen’s d, a measure of effect size.

The most common way of examining MAYSI-2 results is to consider the proportion of youths scoring above the caution and warning thresholds (Table 2). Across every condition that the MAYSI-2 measures—except for alcohol and drug use—higher proportions of youths in adult prison scored in the caution and warning ranges, compared with the control group. For all conditions except suicide ideation, most participants in adult prison had subscale scores at least in the caution range, with a substantial minority (7% to 28%, depending on the subscale) also scoring in the warning range. In terms of suicide ideation, 32% reported sufficient symptoms to warrant clinical attention (caution range), and 20% warranted intense attention (warning range).

Finally, to explore comorbidity, we examined the number of subscales on which youths received elevated scores (Table 3). Most (51%) participants had scores in the warning range for at least one subscale (compared with 44% of youths from the comparison sample), and one-third scored in the warning range on two or more scales (compared with 19% of the comparison sample). Almost all (90%) participants had scores in the caution range for at least one subscale, and nearly three-fourths (73%) had scores in the caution range for more than one scale (compared with 77% and 55% of the comparative sample, respectively).

Discussion
This small study was the first to explore symptoms of mental health problems among juveniles incarcerated in adult prison. Because participants completed the MAYSI-2, the screening measure most commonly used in juvenile justice settings, we could compare participants’ self-reported symptoms to those from a normative sample of youths in the juvenile justice system. We selected the subsample from the MAYSI-2 normative data that is probably most com-
parable to our participants—that is, a sample of boys aged 16 or 17 in a juvenile correctional facility (rather than probation or detention) with a racial and ethnic composition similar to that of our sample. We emphasize that this comparison group is not a matched sample in the strictest sense because we could not match for criminal history or most recent offense. The comparison group is also not perfectly matched in that it included youths from 11 states in addition to Texas (although most of these states are similar in terms of their laws and procedures related to juvenile waiver). Nevertheless, a national comparison sample from juvenile correctional facilities helps to place in perspective the results from our participants in adult prison.

Overall, juveniles in adult prison demonstrated substantial distress or treatment needs. Most scored above the highest clinical cutoff (warning cutoff) on at least one clinical subscale. For all clinical scales except suicide ideation, the majority of youths scored above the caution cutoff score. Results are consistent with a general pattern across MAYSI-2 research wherein youths in the “deep end” of the criminal justice system, for example, correctional settings, tend to have higher MAYSI-2 scores than youths in the “shallow end” of the system, such as probation contexts (4,19). Extending this trend, our small sample of juveniles in adult prison appear to have reported, on average, more substantial treatment needs than any other published sample of youths who have completed the MAYSI-2. Just as comorbidity appears to be the norm in juvenile justice samples (2), the majority of our sample warranted clinical attention in more than one clinical domain.

This study raises, but cannot answer, several important questions about mental health symptoms among juveniles in adult prison. Do these youths—compared with those who remained in the juvenile justice system—manifest more psychiatric symptoms before incarceration, raising the possibility that having a substantial number of symptoms contributed to substantial offending? Or did their symptoms increase over the

### Table 2

<table>
<thead>
<tr>
<th>Subscale</th>
<th>“Caution” cutoff N=61</th>
<th>Juvenile correctional facility N=6,044</th>
<th>“Warning” cutoff N=61</th>
<th>Juvenile correctional facility N=6,044</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol/drug use</td>
<td>32 54</td>
<td>2,867 47</td>
<td>8 14</td>
<td>1,621 27</td>
</tr>
<tr>
<td>Angry-irritable</td>
<td>37 61**</td>
<td>1,935 32</td>
<td>16 26**</td>
<td>562 9</td>
</tr>
<tr>
<td>Depressed-anxious</td>
<td>35 57**</td>
<td>2,362 39</td>
<td>10 16</td>
<td>397 10</td>
</tr>
<tr>
<td>Somatic complaints</td>
<td>31 51</td>
<td>2,268 38</td>
<td>4 7</td>
<td>277 5</td>
</tr>
<tr>
<td>Suicide ideation</td>
<td>19 32**</td>
<td>879 14</td>
<td>12 20</td>
<td>516 8</td>
</tr>
<tr>
<td>Thought disturbance</td>
<td>42 70**</td>
<td>2,713 45</td>
<td>17 28</td>
<td>1,172 19</td>
</tr>
</tbody>
</table>

* Juveniles in adult prison were study participants (Ns range from 59 to 61 because of missing data). Juveniles in juvenile correctional facilities were a comparison group drawn from MAYSI-2 normative data (Ns range from 6,010 to 6,044 because of missing data). The comparison group was matched to the study group for age and racial-ethnic composition. Youths scoring above the caution cutoff scores on the MAYSI-2 reported a clinically significant degree of distress or symptoms. The warning cutoff scores were established by examining the original Massachusetts normative sample and identifying scores for the 10% of youths who had the highest scores on the subscales. Thus youths scoring in the warning range on a given subscale tended to be among the most distressed and to manifest the most substantial treatment needs.

7p<.05; difference between juveniles in adult prison and the comparison sample

7p<.01; difference between juveniles in adult prison and the comparison sample

### Table 3

<table>
<thead>
<tr>
<th>Number of subscales</th>
<th>Adult prison N=61</th>
<th>Juvenile correctional facility N=6,044</th>
<th>Adult prison N=61</th>
<th>Juvenile correctional facility N=6,044</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>6 10</td>
<td>1,369 23**</td>
<td>30 49</td>
<td>3,411 56</td>
</tr>
<tr>
<td>1</td>
<td>10 16</td>
<td>1,330 22</td>
<td>12 20</td>
<td>1,503 25</td>
</tr>
<tr>
<td>2</td>
<td>9 14</td>
<td>1,017 17</td>
<td>8 13</td>
<td>585 10</td>
</tr>
<tr>
<td>3</td>
<td>5 8</td>
<td>837 14</td>
<td>5 9</td>
<td>311 5</td>
</tr>
<tr>
<td>4</td>
<td>11 18</td>
<td>680 11*</td>
<td>4 7</td>
<td>160 3</td>
</tr>
<tr>
<td>5</td>
<td>11 18</td>
<td>563 9***</td>
<td>2 3</td>
<td>71 1</td>
</tr>
<tr>
<td>6</td>
<td>9 15</td>
<td>269 4***</td>
<td>0 —</td>
<td>24 &lt;1</td>
</tr>
</tbody>
</table>

* Juveniles in adult prison were study participants (N=61 because of missing data). Juveniles in juvenile correctional facilities were a comparison group drawn from MAYSI-2 normative data (Ns range from 6,010 to 6,044 because of missing data). The comparison group was matched to the study group for age and racial-ethnic composition. Youths scoring above the caution cutoff scores on the MAYSI-2 reported a clinically significant degree of distress or symptoms. The warning cutoff scores were established by examining the original Massachusetts normative sample and identifying scores for the 10% of youths who had the highest scores on the subscales. Thus youths scoring in the warning range on a given subscale tended to be among the most distressed and to manifest the most substantial treatment needs. Chi square tests were used to compare the proportion of juveniles in adult prison versus that of the comparison group meeting caution or warning cutoff scores.

7p<.05

7p<.01

7p<.001
course of incarceration? In the comparison sample youths completed the MAYSI-2 at intake into the facility. In our sample youths were incarcerated in adult prison for an average of 14.60±10.61 months (range one to 43 months) before completing the MAYSI-2. Thus our study cannot determine whether our participants in adult prison had more severe symptoms before incarceration than their juvenile counterparts.

However, one recent study may shed some light on these questions (20). Data from the Northwestern Juvenile Project (1), which administered diagnostic interviews to youths in the Cook County Juvenile Temporary Detention Center between 1995 and 1998, allowed researchers to compare psychiatric diagnoses among youths tried in juvenile court and those transferred to adult court (where they were subsequently sentenced to adult prison or given a more lenient sentence). They found that overall, there were few substantial diagnostic differences between the youths processed through juvenile court versus those transferred to adult court; all had high rates of psychiatric illness. However, when researchers examined only youths transferred to adult court, they found that those sentenced to adult prison had significantly higher odds of manifesting a psychiatric disorder, compared with those who were transferred to adult court and subsequently received a lighter sentence. In other words, even though diagnostic interviews took place before any youth was transferred to adult prison, the prison-bound group demonstrated greater psychiatric illness at the time of evaluation (compared with youths who remained in the juvenile justice system and youths who were transferred to adult court but were not sentenced to adult prison). Thus both our study and the much larger Northwestern Juvenile Project suggest that the few youths whom the criminal justice system selects for incarceration in adult prison appear to be a group particularly in need of psychiatric treatment.

Of course, to better understand the nature and progression of mental health problems among juveniles in adult prison, longitudinal research is essential. Future studies should examine not only the longitudinal course of symptoms but also formal diagnoses, which cannot be measured with screening instruments such as the MAYSI-2.

This small study should be considered in light of several caveats. First, the sample included boys only. Research with young offenders has demonstrated that girls tend to manifest more psychiatric symptoms than boys (21,22). Thus we might expect different findings in the very small population of girls in adult prisons. Second, the above-mentioned timing of the MAYSI-2 administration (upon intake for youths in juvenile facilities but after months of incarceration for youths in adult prison) might also explain the slightly lower rates of substance abuse problems reported by our sample, because they probably did not have as recent access to drugs and alcohol as did the comparison group. Thus results may underestimate our sample’s substance abuse before incarceration.

Finally, this sample of juveniles in adult prison in Texas may not be representative of all juveniles in adult prisons nationwide. Texas maintains a Youthful Offender Program to provide some specialized treatment services to juveniles in an adult prison. Conceivably, juveniles in other state prisons—who are less segregated from adults and more isolated from peers and from developmentally appropriate programming—might report greater distress or more psychiatric symptoms.

Conclusions

Despite the preliminary nature of this research, results carry important implications. First, these results bolster the growing national concern regarding mental health problems among youths in the juvenile justice system (23) and suggest that this concern should extend to juveniles who have been transferred to the adult criminal justice system and incarcerated in adult prisons. At the individual level, clinicians who assess and treat juveniles in the adult criminal justice system should recognize the likelihood of substantial psychiatric symptoms. At the level of policy and institutional practice, results suggest a need for developmentally appropriate treatments within adult correctional systems that are responsible for juvenile offenders. Case law (24) and professional organizations (25,26) offer some guidance regarding mental health treatment in corrections. But treating juveniles in adult prisons will require interventions based on the large body of research specific to juvenile offenders (27), which may differ substantially from interventions, even empirically supported interventions, that were designed for adult offenders.

Although juveniles in adult prisons make up only a small portion of prison inmates and a small portion of juvenile offenders, these juveniles pose unique challenges with respect to policy and treatment. Indeed, results from this study suggest that juveniles in adult prison may manifest some of the most substantial mental health treatment needs among all juveniles involved in the justice system.

Acknowledgments and disclosures

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The authors report no competing interests.

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