An Evaluation of the State of Colorado's Care and Treatment of the Mentally Ill: Title 27, Article 10 (CRS 27-10-101)

A Report from the Colorado Department of Human Services

Behavioral Health Services/Division of Mental Health

Prepared by the Division of Mental Health, Data and Evaluation Section

About this Report

In 2007 the Colorado Behavioral Health Services/Division of Mental Health (BHS/DMH) conducted an evaluation of rights-restricted services provided to individuals with mental illness in the State Fiscal Year 2006 (July 1, 2005-June 30, 2006). The evaluation project was approached with the following aims:

- Collect data from all mental health centers/hospitals/agencies/residential child care facilities (known as facilities in the remainder of this document) who were certified by BHS/DMH to provide rights-restricted procedures;
- Analyze these data to identify trends with respect to numbers of particular procedures provided;
- Promote ongoing data collection for future years;
- Revise the data collection tool based upon user feedback.

This report details the results of the evaluation, method of data collection, problematic issues related to data collection, results and limitations of data analysis, and recommendations for future evaluations of 27-10 procedures.

What is the CRS 27-10-101 legislation?
The 27-10 legislation provides rules regarding the care and treatment of individuals with mental illness. The legislation, originally adopted in 1977, was most recently revised in April 2004 with an effective adoption date of June 2004.

Facilities chose to become licensed by the Colorado Department of Public Health and Environment (CDPHE) and subsequently were approved and certified through the Colorado Department of Human Services (CDHS) to provide care under the 27-10 legislation. Facilities submitted a formal application to CDHS via the Division of Mental Health (DMH) and participated in an onsite evaluation. Facilities are designated for a one-year period and must reapply annually. BHS/DMH is responsible for evaluating compliance with the 27-10 statutes and has the responsibility of investigating all 27-10 complaints.

Facilities can be designated to provide any or all of the following services:

- Seventy-two hour treatment and evaluation
- Short-term certification and treatment
- Long-term certification and treatment
- Seclusions
- Restraints
- Involuntary medication management
- Electroconvulsive therapy
- Court-ordered imposition of disability or deprivation of rights

All facilities abide by several requirements regarding provision of treatment, notification of clients' rights, provision of advocates and data reporting, among others.

Data Collection

Why is reporting data about 27-10 necessary?
Data reporting is necessary for multiple reasons. Primarily, tracking data regarding 27-10 procedures is important for the safety of clients and is in the best interest of the facility given the sensitive nature of the procedures. Additionally, BHS/DMH is invested in better understanding the overall picture of mental health services in Colorado; these data contribute to that knowledge. Lastly, the 27-10 statutes require that all 27-10 facilities report data to CDHS annually.

What types of data do BHS/DMH request and how are data collected?
Specific data are required for seventy-two hour holds, short and long-term certifications, voluntary patients, involuntary medications, seclusion and restraints, electroconvulsive therapy, and imposition of legal disability or deprivation of a right. Within each of these categories are specific data collection requirements including demographic information, procedure date, reason, and outcome of the procedure as well as other information.

Data are collected via an excel spreadsheet generated by BHS/DMH that includes all of the aforementioned required data points/variables with drop-down answer options corresponding to each variable. This spreadsheet was distributed to 27-10 designated facilities and remains the current tool for data collection.

When are data requirements due and what is the reporting timeframe?
For the purpose of the 2007 evaluation of 27-10 procedures, data were accepted from FY 2005-2006 on a rolling basis in order to collect and include as much data from 27-10 facilities as possible. However, BHS/DMH requests that in the future, state fiscal year data (July 1 through June 30) be reported by the end of July of the following fiscal year.

How will the 27-10 data be analyzed? What are the areas of focus in this evaluation?
The data for a specific fiscal year will be analyzed in aggregate. Ideally, summative information about each category of data, including demographic information, will be gathered and reported as well as procedural trends by demographic variables. For the purposes of this report, summative information will be provided regarding 72-hour holds, short and long term certifications and seclusions and restraints. The analyses and report are restricted due to multiple problematic data issues (see below); as a result, resources were dedicated to analyzing and reporting only a portion of facility data collected for FY 2005-2006.

Problematic issues in data collection

Given that this first evaluation year was approached as a pilot project, various roadblocks were anticipated and observed. Many facilities had limited awareness of the 27-10 data collection requirement; therefore, some facilities were unable to provide 27-10 data for the FY 2005-2006. Other facilities provided all available data but these data were not comprehensive in scope. In some cases, data were provided in a paper format and were not incorporated into these analyses due to limited BHS/DMH data and evaluation resources. Resistance to providing 27-10 data to BHS/DMH was also observed. It is an aim of this report to help provide explanatory information about 27-10 data collection requirements and usages in order to temper such resistance and promote future collaboration and participation. Additionally, the data collection tool was often found to be deficient by facility users. In many cases, variable option choices were not comprehensive for the user, which created inconsistencies in completing pieces of the spreadsheet (e.g., reason for a certification was often flagged as limited in response choices).

The data collection tool included drop-down options for each variable but no data dictionary was disseminated with the tool. It is therefore unclear if all providers interpreted the variable meanings and completed the spreadsheet in the same manner. Many interpretations were possible and without clarification from BHS/DMH, it is possible that providers' interpretations of the requested variables did not match the intentions of the data collection tool. Therefore, it is difficult to assert that all data submitted were consistent and reliable from facility to facility.

Additionally, many providers altered the spreadsheet prior to submission, which often required a large degree of work by BHS/DMH data and evaluation staff in order to transfer the information into the requested format. In some instances, the departure from the original format was too significant to be included in the analyses.

Despite these limitations, the following data are presented to describe and highlight a portion of the 27-10 procedures that took place in FY2005-2006. Readers are encouraged to interpret the following results with caution given the problematic issues in data collection noted above and the caveats regarding the results, which are described below.

Results

Data were provided from 39 facilities (out of a total of 55 or 71%) across the State of Colorado. Please refer to Appendix A for a complete list of these agencies.

A relatively large percentage of missing data was observed throughout all aspects of the analyses presented below. This is possibly due to facilities having only partially completed data available to them at the time of the request for data by BHS/DMH. It may also be indicative of user difficulties with the spreadsheet due to a lack of a data dictionary. Future data collection and collaboration with facility users may help determine the exact cause for missing data.

72 hour holds, Short-term certifications, Long-term certifications

What follows are data corresponding to 72-hour holds, short-term certifications and long-term certifications. There were 14,834 entries in total (including individuals with multiple certifications and holds). The first set of tables details information about legal status, persons responsible for initiating holds and certifications, reasons for the holds and certifications, and outcomes of the holds and certifications for all 14,834 entries.

Regarding legal status, or the type of hold or certification that was placed on the consumer, a majority (68.5%) were 72-hour holds. See Table 1 for the distribution of legal status options.

Table 1

Legal Status Distribution

Status	*P*	*n*
72-Hour Hold	68.5	10,158
Long Term Certification	4.3	645
Short Term Certification	13.8	2,044
Voluntary	13.4	1,981
Other	.0	6
Total	100.0	14,834

Data were collected regarding who initiated the hold or certification and the distribution of information is presented in Table 2.

Table 2

Distribution of Parties Responsible for Initiating Holds or Certifications

Party Responsible	*P*	*n*
Police	11.8	1,756
Court	1.9	278
Facility-Based Personnel	49.4	7,324
Other	9.7	1,442
Missing	27.2	4,034
Total	100.0	14,834

Table 3 presents information about the reason for the hold or certification with dangerous to self being the most common reason (40.0%). In the data collection tool, options included only dangerous to self, dangerous to others and gravely disabled. Many facilities expressed concerns that these options were limited in scope; many users included a more expansive set of options when they returned their data to BHS/DMH. As a result, midway through the data collection process, the data collection tool or spreadsheet was expanded to include more comprehensive options (e.g., dangerous to both self and others). Table 3 includes these expanded options. Given the mid-year change in the spreadsheet and

the inconsistencies with which facilities completed this variable (not all facilities used the more comprehensive options), the following data should be interpreted with caution.

Table 3

Reason for the Hold or Certification

Reason	*P*	*n*
Dangerous to Self	40.0	1,756
Dangerous to Others	4.1	614
Gravely Disabled	15.0	2,223
Dangerous to Self and Others	5.4	806
Dangerous to Self and Gravely Disabled	2.5	374
Dangerous to Others and Gravely Disabled	2.9	424
Dangerous to Self, Others and Gravely Disabled	2.6	384
Missing	27.5	4,073
Total	100.0	14,834

The outcome of the hold or certification data showed that approximately one fifth of individuals with certification or holds were transitioned to a voluntary status. For the full distribution of outcome options, see Table 4. There were inconsistencies in the manner in which facilities tracked individuals whose outcomes were "certified." A "certified" outcome indicates that the person required short or long term certification at the conclusion of their initial 72-hour hold or certification. In many instances, facilities tracked information about the "certified" outcome in a separate entry within the data collection tool, which allowed for continued tracking of the individual as they progressed through treatment. In other instances, facilities did not track the "certified" outcome in a new entry, thus ending the ability to follow the entirety of the person's treatment. The result of the latter trend is an uncertainty regarding the exact number of certifications that occurred during the fiscal year. This result underscores the importance of improved data reporting in future years, aided by a data dictionary and instructions, in order to ensure data integrity. Again it is necessary to extend caution to readers of this report in interpreting the data included in this report given the multitude of caveats.

Table 4

Distribution of Hold and Certification Outcomes

Outcome	*P*	*n*
Dropped	14.8	2,195
Voluntary	21.3	3,166
Certified	9.3	1,376
Transferred	12.0	1,782
Other	9.7	1,444
Missing	32.8	4,871
Total	100.0	14,834

The following set of tables details information about demographic variables and the numbers of unique or unduplicated clients (n = 10,940) placed on a hold or certification in FY 2005-2006 (i.e., if a client had multiple holds or certifications, only their first hold or certification was included in the following analyses).

Table 5 presents the number of unique holds and certification represented in the legal status variable. As is evident in the table, the percentage of unique 72-hour holds (83.7%) was slightly higher in comparison to the percentage of the total or duplicated set of 72-hour holds (68.5%). It is notable that the percentage of unique certifications (7.2%) was lower than the percentage of the total or duplicated set of certifications (18.1%). It can be deduced that several consumers had multiple 27-10 procedures and often these interactions progressed with respect to length of stay (as determined by a larger percentage of certifications when multiple client cases were included in the analysis). With better data integrity in the future, it will be possible to further analyze the demographic aspects of the consumers who require more frequent and intensive treatment.

Table 5

Unduplicated Legal Status Distribution

Status	*P*	*n*
72-Hour Hold	83.7	9,157
Long Term Certification	2.5	273
Short Term Certification	4.7	518
Voluntary	9.0	987
Other	.0	5
Total	100.0	10,940

Table 6 describes who initiated the hold or certification for the set of unduplicated clients. The percentage of unique police, court-initiated, or facility-based holds/certifications (14.4%, 2.2%, and 59.4% respectively) was slightly higher than the total or duplicated set of police or court-initiated, or facility-based holds (11.8%, 1.9%, and 49.4% respectively).

Table 6

Unduplicated Distribution of Parties Responsible for Initiating Holds or Certifications

Party Responsible	*P*	*n*
Police	14.4	1,573
Court	2.2	237
Facility-Based Personnel	59.4	6,501
Other	11.1	1,218
Missing	12.9	1,411
Total	100.0	10,940

Table 7 presents information about the reason for the hold or certification for the unduplicated set of consumers who were placed on a hold or certification. Dangerousness to self was the most common reason (46.2%), which represents a slight increase in comparison to the total or duplicated set of consumers who were placed on a hold or certification due to dangerousness to self concerns (40.0%).

Table 7

Unduplicated Reason for the Hold or Certification

Reason	*P*	*n*
Dangerous to Self	46.2	5,056
Dangerous to Others	3.7	405
Gravely Disabled	13.0	1,422
Dangerous to Self and Others	4.3	471
Dangerous to Self and Gravely Disabled	1.5	162
Dangerous to Others and Gravely Disabled	1.0	110
Dangerous to Self, Others and Gravely Disabled	1.6	174
Missing	28.7	3,140
Total	100.0	10,940

The outcome of the hold or certification data for the set of unduplicated consumers showed that 26.3% of individuals with certification or holds were transitioned to a voluntary status, which is a slight increase in comparison to the 21.3% of duplicated cases with a voluntary outcome. For the full distribution of unduplicated outcome options, see Table 8.

Table 8

Distribution of Unduplicated Hold and Certification Outcomes

Outcome	*P*	*n*
Dropped	17.5	1,915
Voluntary	26.3	2,880
Certified	9.4	1,029
Transferred	14.6	1,600
Other	4.4	486
Missing	27.7	3,030
Total	100.0	10,940

Regarding demographics for the consumers who had a hold or a certification, 48.5% were female, compared to 51.4% males (.1% did not report gender). The ethnic distribution is presented in Table 9.

Table 9

Ethnic Distribution of Consumers with Certifications and Holds

	Respondents	
Ethnicity	*P*	*n*
American Indian/Alaskan	0.4	45
African American	6.1	662
Asian/Pacific Islander	0.7	82
Caucasian	55.8	6,102
Hispanic	11.2	1,220
Other	2.1	236
Missing	23.7	2,593

Total	100.0	10,940

Table 10 presents information about the age distribution. In large part, the number of missing values can be accounted for by one facility that provided no birth date but rather a bifurcated age variable consisting of "over or under age 18." To include this information, the age distribution presented in Table 10 was manipulated in order to present all age data in a bifurcated format, which is represented in Table 11.

Table 10

Age Distribution of Consumers with Certifications and Holds

	Respondents	
Age Group in Years	*P*	*n*
0-5.99	0.2	24
6-11.99	2.3	252
12-17.99	16.5	1,803
18-59.99	52.7	5,763
60+	4.5	493
Missing	23.8	2,605
Total	100.0	10,940

Table 11

Bifurcated Age Distribution of Consumers with Certifications and Holds

	Respondents	
Age Group	*P*	*n*
Under 18	21.3	2,339
Over 18	76.8	8,397
Missing	1.9	204
Total	100.0	10,940

Seclusions and Restraints

The following data correspond to seclusions and restraints. There were 5,329 entries in total (including individuals with multiple seclusions and restraints). The majority (49.4%) of these procedures were restraints while 30.2% were seclusions and 20.3% were a combination of seclusions and restraints.

An unduplicated descriptive analysis was also conducted to determine the number of unique consumers requiring a seclusion and/or restraint (n = 1,455) as well as the demographic composition of these consumers. Approximately 52.5% of these consumers experienced a seclusion, 21.2% required a restraint and the remaining 26.2% of unduplicated consumers required a combination seclusion and restraint procedure. See Table 12 for a comparison of the total or duplicated number of seclusions and restraints to the number of unique consumers requiring a seclusion and/or restraint.

Table 12

Comparison of Duplicated and Unduplicated Seclusions and Restraints.

	Total Seclusions and Restraints	Unique Consumers Requiring Seclusions and Restraints
Type	*P (n)*	*P (n)*
Seclusion	30.2 (1,612)	52.5 (764)
Restraint	49.4 (2,633)	21.2 (309)

Seclusion and Restraint	20.3 (1,083)	26.2 (381)
Other	0.1 (1)	0.1 (1)
Total	100.0 (5,329)	100.0 (1,455)

Regarding demographics for the unduplicated or unique consumers requiring a seclusion or restraint, 48.2% were female and 51.8% were male. Ethnic distribution is presented in Table 13.

Table 13

Ethnic Distribution of Consumers Requiring Seclusions and Restraints

	Respondents	
Ethnicity	*P*	*n*
American Indian/Alaskan	0.3	5
Asian/Pacific Islander	0.9	13
African American	11.3	165
Caucasian	50.9	740
Hispanic	16.6	242
Other	1.5	22
Missing	18.1	263
Total	100.0	1,455

Table 14 presents information about the age distribution. In large part, the number of missing values can be accounted for by one facility that provided no birth date but rather a bifurcated age variable consisting of "over or under age 18." To include this information, the age distribution presented in Table 14 was manipulated in order to present all age data in a bifurcated format, which is represented in Table 15.

Table 14

Age Distribution of Consumers Requiring Seclusions and Restraints

	Respondents	
Age Group in Years	*P*	*n*
0-5.99	.8	11
6-11.99	6.9	100
12-17.99	16.4	239
18-59.99	38.1	555
60+	2.5	37
Missing	35.3	513
Total	100.0	1,455

Table 15

Bifurcated Age Distribution of Consumers Requiring Seclusions and Restraints

	Respondents	
Age Group	*P*	*n*
Under 18	29.6	430
Over 18	70.4	1,025
Total	100.0	1,455

Recommendations

Given the large number of caveats peppered throughout the above report, it is important to describe several recommendations that aim to improve the data collection process and improve the integrity of future data. The recommendations are as follows:

1. Better collaboration between facilities and BHS/DMH is recommended to help streamline the data collection process and increase the number of facilities who participate. Collaboration will encourage continued facility feedback to improve the data collection process and will promote facility buy-in to the data collection process.
2. A data dictionary is necessary to better inform facility users about the variables of interest within the data collection tool. Clear, concise instructions will facilitate consistent and more reliable use of the data collection tool and will enable more in-depth and meaningful analyses.
3. The data collection tool should be improved by way of consolidating data to include only necessary and required data. Improvements are also recommended to allow for ease of use for both the facility user and the analyst; specifically, the tool ideally will be comprehensive and self-explanatory and will circumvent the need for the user to manipulate the form to meet their needs, which was problematic in this pilot project.

Summary

In 2007 BHS/DMH conducted an evaluation of rights-restricted services provided to individuals with mental illness in the State Fiscal Year 2006 (July 1, 2005-June 30, 2006). This was the first year that data were formally collected in an effort to investigate trends of rights-restricted procedures across all certified 27-10 facilities and to promote ongoing data collection in future years.

Several problems were observed in this process, primary among them being inconsistent use of the BHS/DMH-generated data collection tool which led to a limited ability to analyze and interpret the submitted data. A related and equally important issue was the use of a data collection tool that did not include an exhaustive list of variable choices and was not accompanied by a data dictionary. These roadblocks are being addressed by BHS/DMH with the goal of future 27-10 data collection being streamlined and self-explanatory, resulting in more complete and reliable data.

Due to the number of limitations and caveats, only descriptive analyses were conducted and the subsequent results should be interpreted with caution. With respect to holds and certifications, a total of 14,834 holds and certifications were represented in the data collected by BHS/DMH. In many cases, one consumer had multiple holds or certifications; when these duplications were accounted for, there were 10,940 unique individuals who were placed on a hold or certification. There were 5,329 seclusions and restraints in the total data set (including consumers with multiple procedures). When duplicate cases were removed from the analyses, a total of 1,455 unique clients requiring a seclusion and restraint remained.

It is recommended that the data collection tool be improved and collaboration with facilities be expanded to allow for a more successful data collection process. Although this pilot project was fraught with

limitations, it marks an important step toward collecting complete, informative data about rights-restricted procedures. In the future, BHS/DMH will ideally have the ability to identify trends with respect to 27-10 procedures and demographic variables. This information is vital to having comprehensive, reliable information about the services that are being provided to consumers of mental health services in Colorado.

Appendix A: Levels of Participation by 27-10 Designated Facility in FY2006 Data Collection

Facility	Data Submitted and Included in Analysis	Data Submitted but Not Included in Analysis	No Data Submitted*
Adolescent and Family Institute of Colorado			x
Arapahoe/Douglas Mental Health Network		x	
Aurora Comprehensive Community Mental Health Center	x		
Boulder Community Hospital	x		
Cedar Springs Behavioral Health System			x
Centennial Mental Health Center	x		
Centennial Peaks Hospital	x		
CMC	x		
Colorado Boys Ranch	x		
Colorado Mental Health Institute at Fort Logan	x		
Colorado Mental Health Institute at Pueblo	x		
Colorado West Mental Health Center	x		
Community Reach Center	x		
Denver Health and Hospital Authority	x		
Devereux Cleo Wallace Center			x
Exempla West Pines			x
Highlands Behavioral Health System			x
Jefferson Center for Mental Health			x
Jefferson Hills, Aurora and Lakewood			x
Larimer Center for Mental Health	x		
Longmont United Hospital	x		
Mental Health Center of Boulder and Broomfield Counties	x		
Mental Health Center of Denver		x	
Midwestern Colorado Mental Health Center	x		
Mountain Star (CMHI at Ft. Logan)	x		
NCMC Behavioral Health	x		
North Range Behavioral Health	x		
North Suburban Medical Center	x		
North Valley Hospital			x
Parkview Medical Center	x		
Penrose St. Francis Health Services			x
Pikes Peak Mental Health Center			x
Porter Adventist Hospital	x		
Presbyterian Saint Luke's Medical Center	x		
PVHS/Mountain Crest	x		
Rose Medical Center	x		
San Luis Valley Comprehensive Mental Health Center	x		
Savio House	x		
Skyridge Medical Center	x		
SMC	x		
Southeast Mental Health Services	x		
Southwest Mental Health Center			x
Spanish Peaks Mental Health Center		x	
SRMC	x		
St Anthony Hospital Systems	x		
St. Joseph Hospital			x
St. Mary-Corwin	x		
Swedish Hospital	x		
The Children's Hospital	x		
The Medical Center of Aurora TMCA	x		
U. of Colorado Hospital Inpatient Psychiatric Services			x
VA Medical Center (Grand Junction)	x		
VA Medical Center (Denver)			x
West Central Mental Health Center			x
West Slope Mental Health Stabilization Center	x		

* Many of these facilities were in the process of updating data collection procedures and were in contact with BHS/DMH throughout this process. Others had not provided any 27-10 procedures during FY2006.