

## Use of Restraint and Seclusion in the Emergency Department

August 01, 2005 | [Schizophrenia](#) [1], [Nocturnal Paroxysmal Dystonia](#) [2], [Mania](#) [3], [Psychiatric Emergencies](#) [4], [Addiction](#) [5], [Bipolar Disorder](#) [6] By [Leslie S. Zun, MD, MBA](#) [7]

Restraints and seclusion have been used for many years in emergency departments (EDs) and psychiatric emergency services (PESs), but anecdotal case reports and newspaper investigations as well as clinical advances have led to restrictions in their use.

### Source:

Seclusion and restraint are interventions that carry a degree of risk, as noted by the American Psychiatric Association (APA). The APA indicates that use of restraint and seclusion is allowable when, according to clinical judgment, less restrictive interventions are inadequate or inappropriate and the risks of these interventions outweigh the benefits.<sup>1</sup> The American Academy of Pediatrics discourages the use of restraints and seclusion; rather, this organization recommends verbal interventions and therapeutic holding for children and adolescents in psychiatric facilities.<sup>2</sup> Although their review did not specify location, the Cochrane Collaboration states that it is uncertain about the value of seclusion or restraint in persons with serious mental illness.<sup>3</sup>

Most experts in the emergency field believe, however, that there is an essential role for these procedures in the care of patients in the acute care setting. This article will briefly define restraint and seclusion, lay the foundation for their restricted use, review studies on complications, discuss indications for restraint and seclusion and their application, and review combination drug therapy.

### Defining Restraint and Seclusion

Restraint is defined by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO)<sup>4</sup> as any chemical or physical method of restricting a patient's freedom of movement, physical activity, or normal access to his or her body. This definition does not include other interventions that are the usual and customary part of a medical diagnostic or treatment procedure performed with consent. The JCAHO defines chemical restraint as the inappropriate use of a sedating psychotropic drug to manage or control behavior.<sup>5</sup> Seclusion is defined as the involuntary confinement of a patient alone in a room, with the patient physically prevented from leaving for any period. There are 4 variants to seclusion: placing a patient in a locked room; placing a patient in a room with the door held shut; placing a patient in a room in which freedom is restricted; and separation of a patient from the group.<sup>6</sup>

### Standards for Use of Restraint and Seclusion

JCAHO standards PC.11.10-11.100 and PC.12.10-12.190 state the requirements for the use of seclusion and restraint in all health care settings for behavioral and nonbehavioral reasons.<sup>7</sup> In the "Hospital Conditions of Participation for Patients' Rights," the Healthcare Financing Authority (HCFA, now termed the Centers for Medicare & Medicaid Services [CMS]) presents standards for use of restraint and seclusion, including orders, assessment, monitors, reevaluation, and termination.<sup>8</sup> Both organizations require that a physician evaluate the patient within 1 hour of placement in restraint or seclusion.

The JCAHO standards include requirements for prevention, monitoring, training, documentation, notification, preferred interventions, order limitations, assessment, and discontinuation. These rules were then followed in 2000 - 2001 by interim HCFA rules for children's residential treatment centers.<sup>9-11</sup> In 2003, the APA,<sup>1</sup> American Psychiatric Nurses Association,<sup>12</sup> National Association of Psychiatric Health Systems,<sup>13</sup> American College of Emergency Physicians,<sup>14</sup> and Child Welfare League of America<sup>15</sup> made policy statements and recommendations.

### Indications and Contraindications

The chief indication for placing a patient in restraint or seclusion is prevention of harm to himself, other patients, or staff. Other, much less definite indications include patient requests; prevention of destruction of property; prevention of significant disruption of treatment programs; assistance in treatment as part of ongoing behavior therapy; and decreasing overstimulation, disruption of a treatment program, or chaotic behavior.<sup>16</sup> The patient's chaotic or disruptive behavior is a prelude to danger. Reasons for which restraint and seclusion should *not* be used include punishment;

convenience; preventing a voluntary patient from leaving; lack of resources to supervise the patient adequately; delirium or dementia; severe drug reactions; history of self-injury or aggression; maintaining an orderly treatment environment; a medically unstable state; and inability to perform one-to-one observation.<sup>16</sup>

### Complications of Restraint

There are many anecdotal reports of restraint complications in acute care facilities. Complications of restraint included problems of elimination, aspiration pneumonia, circulatory obstruction, cardiac stress, skin breakdown, poor appetite, dehydration, and accidental death. In 1998, a series of articles describing the deaths of 142 patients across the nation appeared in the *Hartford Courant*.<sup>17</sup> These newspaper articles prompted governmental agencies and the JCAHO to regulate and control the use of restraint and seclusion.

The concern over complications and death prompted interim rules from the HCFA for the use of restraint and seclusion in 1999.<sup>4</sup> Unfortunately, little good medical knowledge exists about restraint complications in the emergency setting. In a 1988 survey study of directors of emergency medicine residency programs, 13% of the respondents reported significant injuries during the restraint process at their institutions in the past 5 years, including fractures and head injuries.<sup>18</sup> Deaths in the ED caused by use of restraint have been associated with cocaine-induced arrhythmias.<sup>19</sup> The hogtie (hobble) restraint technique has been associated with multiple cases of cardiovascular collapse.<sup>20</sup>

Articles related to the complications associated with use of restraint have not described in any detail the circumstances of these deaths or their relationship to patient age, process of applying restraint, or underlying medical conditions. One prospective trial found that the rate of complications was 5.4% among 298 patients, with no major injuries or mortality.<sup>21</sup> This study was performed in an urban teaching ED and describes the rate and complications of restraint use over 1 year. Twelve complications were reported: getting out of restraints (6), injuring others (2), vomiting (1), injuring self (1), hostile or increased agitation (1), and other (1). This study was performed after the new standards by the HCFA and the JCAHO were issued. Complications that are more difficult to measure include psychological harm, loss of dignity, damage to the therapeutic alliance, and violation of personal rights.

### Studies of Use of Restraint and Seclusion

Older studies have found that patients were frequently physically restrained in the health care setting. A review by Soloff and colleagues<sup>22</sup> of 13 published studies involving adult inpatients found that 1.9% to 66% of the patients were secluded or restrained. Another study found that 25.2% of teaching EDs restrained at least 1 patient per day.<sup>4</sup> An average of 3.7% of all ED patients needed restraint and seclusion or restraint alone. The use of seclusion in emergency medicine is limited to one small study. Lavoie and colleagues<sup>18</sup> found that 61% (78 of 127) of the ED directors used seclusion in their department.

More recent information indicates that the use of restraint and seclusion has been significantly reduced. One survey of emergency medicine and pediatric emergency training programs found that 5% or less of the pediatric psychiatric patients were restrained.<sup>23</sup> For hospitalized youths, the rate of seclusion has been reported as 61% and the rate of restraint as 49% after implementation of the federal regulations.<sup>24</sup>

### An Approach to Restraint and Seclusion

Figure 1 demonstrates the process we follow in the ED at Mount Sinai Hospital for placing a patient in restraint and seclusion. The flow diagram divides the patients into agitation-level categories. For patients with severe agitation, restraint and seclusion may be needed immediately after arrival at an acute care setting. For moderately agitated patients, restraint and seclusion would be considered after other interventions have failed. For those with mild agitation, it is unlikely that restraint and seclusion would ever be necessary. This flow diagram is predicated on the availability of some means to assess the patient's level of agitation. It is essential to reduce a patient's severe level of agitation to prevent the use of restraint and seclusion.

### Measuring Restraint and Seclusion

The 2 commonly used tests of agitation are the Overt Aggression Scale (OAS)<sup>25</sup> and the Agitated Behavior Scale (Figure 2).<sup>26</sup> Neither of these tests is tailored for use in the emergency setting. Both scales use observed behavior to rank the level of agitation that a patient exhibits, and the OAS has been tested in children. Application of these scales in the severely agitated patient—for example, one who is brought in by the police in handcuffs—might place the staff at risk while someone is

measuring the patient's behavior. The scales can be used during later assessment. There is a need for a short, reliable measure of agitation for use in the emergency setting.

### **Reducing Use of Restraint and Seclusion and Providing Alternatives**

Many studies have examined the ways of reducing the frequency of restraint and seclusion used at their institutions.<sup>27-34</sup> Most institutions have established some form of process improvement to accomplish such reduction, including frequent review of the number of patients placed in restraint and seclusion. Techniques used to reduce the use of restraint and seclusion include increased staff-to-patient ratios; improved management of problematic behavior; correction of inadequate monitoring; removal or addition of sensory-based treatment; intervention before loss of control; staff education on cultural differences in anger expression and control; and formal training of staff in crisis intervention, including alternatives to restraint and seclusion and how to talk to people in crisis.

A key concern is that reduced use of restraint and seclusion might lead to a greater number of assaults on staff. Indeed, one study in an inner-city community hospital with 3 inpatient psychiatric units did find that reduced use of restraint and seclusion led to an increased number of physical assaults on the staff, from 31 to 83, and assaults on patients, from 67 to 85, in a 12-month time frame compared with the previous 12 months.<sup>35</sup> In general, however, it is thought that reducing restraint and seclusion reduces injuries rather than increases them.<sup>36</sup>

In published studies of techniques for restraint and seclusion reduction in the hospital or long-term-care facility, the main focus has been on changes in staff education. In these settings, patients are stabilized and known by the staff and there is usually the luxury of time for use of techniques to prevent further escalation; in the ED or PES, patients may be unknown, they may have a more acute condition, and much less time may be available. However, it is still essential to attempt alternative techniques before resorting to restraint and seclusion if the clinical situation allows. Some alternatives are listed in Table 1.

Unfortunately, some of these techniques are just not practical or reasonable in the emergency setting. For example, it may be difficult to control the temperature, move the patient to a less chaotic environment, or provide for pastoral care in the ED. However, it would be reasonable to attempt to provide one-to-one observation, to negotiate with the patient, to reduce stimulation, to get the family involved when judged to be helpful, and to provide for the patient's basic needs.

Few studies have examined the effectiveness of these alternatives to restraint and seclusion in acute care settings, but there is more information available on measures used in the public psychiatric hospital setting. In a study covering the period from 1997 to 2002, many initiatives were tried.<sup>29</sup> Changes in the process for identifying critical cases and initiating a clinical administrative case review were found to be effective in reducing the use of restraint and seclusion. One state hospital system viewed the use of restraint and seclusion as a treatment failure and reduced use dramatically in the inpatient population.<sup>37</sup> A study by Dorfman and Kastner<sup>23</sup> reported that a large percentage of emergency medicine and pediatric emergency medicine residency programs do not teach their trainees about the application of restraints or the appropriate clinical situation in which to use restraints.

### **Application and Removal of Restraint and Seclusion**

The process of applying and removing restraint and seclusion needs to be determined in each institution within the limits of the JCAHO and the CMS guidelines (Table 2). The APA guidelines<sup>1</sup> stipulate that staff should be thoroughly trained and have demonstrated competence in the application of safe and effective techniques followed by each institution. The directives should address reasons for different types and degrees of seclusion and restraint; clinical indications and developmental considerations; monitoring frequency and duration of seclusion and restraint; qualifications of clinicians who can authorize, implement, monitor, and terminate seclusion and restraint; appropriate documentation; in-service training requirements for staff; and quality-improvement process.

Policies and procedures must be in place to stipulate the means by which patients are restrained. Unfortunately, many unanswered questions remain about the use of restraints: What is the proper number of restraints to be placed? What body position (supine, prone, side-lying, sitting) should be used? Are 4 restraints better than 3 or 2? Does the position that the patient is placed in or number of restraints interfere with the staff's ability to assess the patient or the patient's ability to meet his or

her own needs? What is the level of training required for health care providers who place patients in restraints or seclusion? Procedures need to be developed to determine how and by whom restraints are applied.

There are certain requirements in the policies and procedures for restraint and seclusion. The JCAHO states that verbal and written orders for maximum time until reassessment for restraint and seclusion are age-dependent: 1 hour for children younger than 9 years, 2 hours for children aged 9 to 17 years, and 4 hours for adults. The HCFA states that a physician or other licensed independent practitioner must see the patient and evaluate the need for restraint and seclusion within 1 hour after initiation of the intervention. It is uncertain who is considered an independent practitioner, but physician assistants, registered nurses, nurse practitioners, psychologists, and masters-level nurses may be included.<sup>8</sup> Social workers, licensed counselors, and unlicensed clinical staff do not qualify.

To accomplish restraint, it is usual to have a 5-person team: the leader secures the head, and each other person is responsible for securing an extremity to a cart, chair, or bed. It is recommended that all 4 extremities be restrained securely to the bed with 1 finger space between the extremity and the restraint. Leather restraints are commonly used. Rarely, plastic and Velcro restraint devices are used. Most experts favor placing the patient in a supine position, although one study demonstrated that the prone position calms patients more quickly. Prone restraint is generally viewed as more hazardous and is being eliminated in many facilities.

There is always concern about aspiration. Some have suggested, therefore, that the head of the bed be elevated in supine patients. If the patient is still moving violently, one of the patient's hands may be placed above the head and one below, and additional straps may be placed on the knees and pelvis. Placement of chest straps or any other means of restraint on the patient's head is not recommended. The patient, parent, or significant other should be informed of the reason for restraint.

Patients in restraint and seclusion need frequent monitoring. Reevaluation of the need for continued restraint is essential. The appropriate monitoring of patients in restraints is continuous observation or audiovisual monitoring. The criterion for removal of restraints is simply that the reasons for placing a person in restraints no longer exist. The reason for restraint removal must be documented in the chart or in some procedural form.

Debriefing procedures have been recommended to reduce the use of restraint and seclusion. The purpose of debriefing is to analyze patient factors in the application of restraint and seclusion, plus the staff response to use of the techniques, and to review policies and procedures with an eye to reducing the future use of restraint and seclusion. However, no study has determined the effectiveness of debriefing in reducing the use of restraint and seclusion. Because the patient is only in the emergency setting for a set time, it is difficult to understand how to implement debriefing in the emergency setting to reduce the use of restraint and seclusion. However, debriefing may improve the individual patient's experience in future settings regardless of whether providers in a particular ED benefit. However, discussions with the staff are needed to reduce the overall use of restraint and seclusion.

### **Chemical Restraint**

The APA discourages the use of psychotropic medications for certain populations as first-line treatment of patients exhibiting dangerous behavior.<sup>1</sup> In the emergency care setting, it is particularly difficult to distinguish between the uses of psychotropic medications as a therapeutic intervention that follows from a patient assessment and a written plan of care and the use of these medications to control agitated or violent behavior without a formal assessment and treatment plan. If the medication is used to control a patient's behavior without an assessment and treatment plan, it is considered "chemical restraint." There is a paucity of good ED studies in the literature on the use of chemical restraints.<sup>38-42</sup> Most studies were done in the PES,<sup>43-46</sup> and there have been few comparative trials of different medications or combinations of medications.

### **Medication Choice**

The choice of an antipsychotic or antianxiety agent may be determined by the patient's medical or psychiatric diagnosis. Many times, however, it is difficult to make a firm diagnosis in the ED setting. In one consensus statement, 17 of 20 psychiatric medical directors stated that it is very difficult to determine the cause of violent behavior.<sup>45</sup> In this report, high-potency conventional antipsychotics, a

benzodiazepine, or a combination of both was recommended for initial treatment in the emergency setting of patients with a primary psychiatric disturbance or a general medical cause of agitation.

Benzodiazepines are best for patients with substance intoxication or withdrawal. In a study of 20 PES directors in 1999, 13 respondents said that they give the same acute medication regimen to all violent patients regardless of the eventual diagnosis.<sup>45</sup> The most common regimen was the combination of haloperidol and lorazepam with or without benztropine. Likewise, the choice of agents to use in the ED has not been well studied. In an analysis of 24 studies, of which 3 were performed in an ED setting, lorazepam alone was found to be superior to haloperidol for agitation and combinations were better in the first hour.<sup>46</sup> The studies looked at haloperidol, lorazepam, loxapine, chlorpromazine, molindone, phenobarbital, amobarbital, droperidol, flunitrazepam, and combinations of these drugs.

The use of the newer antipsychotics is limited in the ED but increasing rapidly in the PES. Olanzapine and ziprasidone are approved by the FDA for the management of acute agitation. Risperidone is advocated for the management of acute agitation but does not have the FDA indication and does not come in an intramuscular form. The pivotal trials for the approval of these medications examined patients with a diagnosis of schizophrenia or bipolar mania, but diagnosis of either of these illnesses is rarely made early in the care of patients presenting to the ED. Use of ziprasidone is associated with a low incidence of dystonia and hypotension but has an association with prolonged QT intervals; ziprasidone can be administered orally or intramuscularly. Olanzapine is also available in oral or intramuscular form and may be associated with hypotension and postural hypotension. These side effects are of particular concern when olanzapine is coadministered with intramuscular lorazepam.

Company-sponsored trials found that these new agents can be effective for the management of acute agitation.<sup>47-50</sup> Battaglia,<sup>51</sup> in his review of current medications, states: "These intramuscular atypical antipsychotics may represent a historical advance in the treatment of acute agitation." He comments on the need for well-designed studies of these medications for patients with severe agitation, drug intoxication or withdrawal, and comorbid medical problems.

The use of medications in special populations has not been studied. In children, low-dose benzodiazepines or antihistamines are recommended; the newer antipsychotics risperidone and olanzapine have been used in children, but such use is not FDA-approved. Mentally challenged patients and the elderly should be given low doses of atypical antipsychotics. Dorfman and Kastner<sup>23</sup> found that benzodiazepines, butyrophenone, and antihistamines were regularly used for chemical restraint of children.

The use of all these medications has associated complications. The older medications are associated with a high frequency of sedation, dystonic reactions, hypotension, and QT prolongation. A study of 16 male schizophrenic patients whose symptoms were resistant to previous neuroleptic treatment with haloperidol found that they had significantly more violent episodes with haloperidol than with low-potency neuroleptics (chlorpromazine or clozapine) or placebo.<sup>52</sup> This adverse effect was thought to occur from akathisia or drug-induced behavioral toxicity. Most would agree that the rate of difficult complications is lower with the newer medications; however, some complications are still problematic (Table 3).<sup>53</sup> Some have recommended that these newer agents be considered first-line treatment for agitated patients.<sup>54</sup>

### Seclusion

Although there is some information on the rate and type of complications associated with restraints, less information is available on seclusion. In one study of complications of seclusion, Mattson and Sacks<sup>55</sup> found a high rate of complications. In 63 patients, assaultiveness (32 episodes), destructiveness (5 episodes), and deterioration of mental status (7 episodes) were commonly found. A recent unpublished study found that 28% of the responding ED directors used seclusion.<sup>56</sup> In this study, the authors found that inadequate physical plant and restrictions imposed by regulations were frequently cited as the reason for not using seclusion in the EDs. This study also pointed out several areas of concern: the high complication rate (38.5% of sites had at least 1 complication per month); the number of sites reporting the use of seclusion for children (32.5% of all sites); the fact that many of the patients are also given chemical restraints; the limited number of staff members trained to place patients in seclusion rooms; and the number of hospitals that lack a formal policy and procedure regarding the use of seclusion.

It is clear that seclusion is used in the pediatric setting. However, the American Academy of Child Psychiatry states that seclusion should be used only as an emergency intervention to maintain safety and should be implemented in a manner sensitive to the child's particular developmental level, any specific vulnerabilities, and the overall treatment goals.<sup>57</sup> The latter requirements may be difficult to accomplish in the acute care setting.

As with restraint use, all aspects of seclusion use must be defined. There need to be policies and procedures in place defining who may place a patient in seclusion, length of time of seclusion, the monitoring process, time until reevaluation, removal from seclusion, and the need to meet the patient's physiologic needs. Appropriate physical space and location with monitoring and communication abilities need to be established in each institution. There is little information about the best physical space and equipment for secluding a patient. Seclusion rooms include wooden platform beds glued to the floor instead of stretchers, with handrails and other equipment removed. Constant observation is probably necessary because of the rate of self-injury in seclusion.

### **Other Techniques**

Therapeutic holding is considered a means of redirecting a person's activities by holding him or her for 30 minutes or less.<sup>58</sup> This technique is used in the child and adolescent psychiatry arena but has little place in the emergency setting because it assumes that a therapeutic alliance has already been established with the staff, which is not the case in the emergency setting. This method is not regulated under JCAHO or CMS. No controlled studies of the holding technique versus other techniques could be found in the literature.

### **Combination Therapy**

Little information can be found in the medical literature about the combination of therapies; thus, there is no scientific basis for answering the question of whether it is better to restrain a patient physically and then chemically treat him or to place him in seclusion and physically restrain him. A consensus document noted that 14 of 20 medical directors reported that their protocol was to restrain patients physically and medicate them before a medical workup.<sup>45</sup> Although chemical and physical restraints are commonly used in combination in the ED, there are no known studies on the effects and complications of combination therapy.

### **Further Study**

Unfortunately, the use of restraint and seclusion has not been well studied, and little evidence-based information is available. The Cochrane Collaboration has reviewed the literature on the continuing use of seclusion or restraint.<sup>3</sup> The authors of the Cochrane Collaboration review state that the use of these techniques must therefore be questioned in well-designed and -reported randomized trials. Ethical concerns make carrying out such studies very difficult, however. Although the rate of complications may be related to the number of restraints, type of restraint, age of the patient, application process, and underlying medical conditions, studies analyzing such correlations with the rate of complications are lacking.

There is little information on the immediate and subsequent effects of restraint and seclusion on a patient's psychiatric condition that we can use to determine the relative psychiatric safety of restraint and seclusion. Even more concerning is the frequency of use of combination therapy: physical restraints and chemical restraints. One could easily envision numerous studies to address all these concerns. However, significant resources would need to be devoted to answering these questions in a research area that has traditionally had low funding priority.

### **Conclusion**

The use of restraint and seclusion in the emergency setting is a procedure associated with a high degree of emotions at all levels, from government regulators down to the patients themselves. Restraint and seclusion do have a place in controlling the behavior of patients when no other option is evident. The lack of good data on the application and use of restraint and seclusion limits the ability to draw evidence-based conclusions and make proper recommendations.

Even with these limitations, most experts in the field agree that use of physical restraint is necessary to protect the patient and the staff and that when properly performed, it has a low rate of complications. Once physical restraint is used in cases of extreme agitation, chemical treatment of the patient with the newer agents early in the course of treatment is essential to remove the physical restraints as quickly as possible. Seclusion is a selective treatment option for agitated patients who may benefit from a limited environment in selected EDs. \*

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