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Risk of Dangerousness Assessment, a Quality Management Tool

Beth O'Sullivan

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RISK OF DANGEROUSNESS ASSESSMENT, A QUALITY MANAGEMENT TOOL

Beth O'Sullivan

B.S., Quinnipiac College, 1984

A thesis
Submitted in Partial Fulfillment of the Requirements for the Degree of Master of Public Health at the University of Connecticut 1999
Acknowledgements

This paper is written in memory of Dr. Roger Coleman, M.D., M.P.H., F.A.P.A., with gratitude for his knowledge and insight of the subject at hand and for his continued guidance and support through this study.
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Introduction

This study concentrates on a perennial challenge to all who work within the health system, particularly in the mental, emotional health setting. The problem at hand is the real risk some patients display — risk of danger (dangerousness) to themselves and others around them. The study is not of a longitudinal nature. It involved a rather small sampling over a short period of time but its results shed some light on the subject, corroborate previous findings and lead one on to realize the study must broaden and lengthen.

The problem as it pertains to the acutely ill or the potentially violent in-patients brings some intensity to the fore since these patients present the greatest challenge to staff. The latter has responsibilities to patients and fellow-workers. These are discussed even with some reference to the laws involved. The responsibility to the team is highlighted and all of these issues are covered by a rather broad review of the literature on the subject. Ethical and institutional issues are discussed as well as the development of a risk assessment tool. A specific report is given on the work of Dr. Roger Coleman at Cedarcrest Regional Hospital in Newington, CT. His development of a risk assessment instrument is covered with its task force initiative and a statistical analysis of his results.
The current study concerns data on various components, demographic, admission, length of stay, diagnostic, risk evaluation and incidents. In conclusion the author states needs to be addressed in future studies.
Background Acutely Ill and Potentially Violent Patients

Aggression, violence, and dangerous behavior are factors that many health professionals must deal with, sometimes occasionally or even on a daily basis. The mental health population is not only seen for care in mental health institutions but in emergency departments, crisis intervention units, inpatient psychiatry units, medical units, community based treatment or recreation programs, and legal systems. As a general rule aggression and violence can typically be seen in patients “with severe neuropsychiatric and chronic psychiatric disorders” (Alpert, 1997). However, one must not look at diagnosis alone, as there may be many environmental contextual factors that could also lead to a patient to become violent. Stress measured by life event scores has been found in some studies to be related to increased violence. Unemployment is frequently studied as a life stress that may contribute to the crime and violence. Social support systems or the lack there of have also been identified to correlate with increased risk of violence. Where psychiatric symptoms have been directly measured, “Diverse types of symptoms have been correlated with violence, for example homicidal ideation, hostility, paranoia, command hallucinations, thought disorder, hallucinatory behavior, and motor retardation (Klassen, 1994). Many of these findings are typical that one would encounter in a mental health inpatient facility. The issues of risk and the harm that it can
cause also plays an important role in both criminal and civil mental health law. "On the criminal side, for example, the American Bar Association’s (1989) Criminal Justice-Mental Health Standards specify in black-letter that a court should commit a person acquitted of a violent crime by reason of insanity to a mental hospital only if the court finds clear and convincing evidence that the person is currently mentally disordered and, as a result, poses a substantial risk of serious bodily harm to others" (Monahan, 1994). The risk of harm has been a standard in mental health law. "The American Psychiatric Association’s model state law on civil commitment of several types of mentally disordered persons, including those likely to cause harm" (Monahan, 1994). Another legal issue that entangles itself in the risk of dangerousness issue is the duty to protect statute. Court rulings "such as the Tarasoff ruling have mandated that when a patient threatens violence, the mental health clinician has a special responsibility to evaluate the patient’s dangerousness and to take appropriate actions to protect others from danger" (McNeil, 1998). This duty to protect can put the clinician at odds with the patient and has created controversy around the treatment relationship and the issue of confidentiality. Add to this the inability to predict violence and you can have issues at odds. In a California study the majority of Tarasoff notifications were made by public psychiatric facilities and crisis clinics. Hospitalization does limit the patient while confined, but proper warnings must be given to the victims of a threat should the patient escape from the hospital (McNeil, 1998).

The term violence itself has been studied by the behavioral sciences such as sociology, criminology and psychology, and yet, due to the increase in violent crime and homicide rates, the public health concern about injury and violence prevention has risen
dramatically. Healthy People 2000: National Health Promotion and Disease Prevention Objectives which is published by the U.S Department of Health and Human Service, “have brought new insights to bear on the problem of violent behavior by analyzing violence not as a crime such as burglary or theft but as a health problem” (Monahan, 1994). Clearly the issue of violence must be addressed in every area it impacts.
Studies of Dangerousness

Statistical studies have been recorded on clients who have been determined to be dangerous while other studies have dealt with the prediction of dangerousness among mental health patients. Many of these accounts have indicated errors, particularly in the direction of overprediction (Bingley, 1997). “For any group at risk particularly those assessed as being potentially dangerous, there will be some predicted to be at risk of future dangerous behavior who are not (false positives) and some predicted as not being a risk in the future who in fact are (false negatives)” (Bingley, 1997). As stated before, violence in psychiatric settings is a very real and complex issue. “Frequent serious incidents have been reported in both prospective and retrospective studies” (Owen, 1998). Often the only incidents that are reported are those with serious threats or assaults. Staff members frequently deal with mild threats of violence on a daily basis. These may include verbal threats that may be overlooked. However, patients can have escalating anger that may or may not be defused. Patient variables must be taken into consideration when analyzing specific cases involving violence. Some of those “factors include being a young male with a diagnosis of schizophrenia, particularly with neurological impairment, having a history of violence and being involuntarily admitted to the hospital. Having a diagnosis of dementia or delirium, substance abuse, and personality disorder and bipolar
disorder have also been shown to be related to violence" (Owen, 1998). Environmental issues can also be identified as variables linked to increased risk of violence. These include overcrowding on units and the rescheduling of free or open periods when clients can intermingle such as at meal time or in some recreational settings when they are at close proximity one with the other (Owen, 1998).

A study by Dr. Cathy Owen conducted in five psychiatric institutions in Sydney, Australia attempted to identify and help predict the frequency and types of violent behaviors as well as the analysis of the relationship of violent behaviors to staffing issues. For this study violence was considered to be any physical behavior that caused harm, either to oneself or others. Violent incidents were classified utilizing Morrison’s hierarchy of violent and aggressive behavior.

Table 1

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<th>Level and behavior</th>
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<tr>
<td>Level 1 Inflicted serious harm requiring medical care</td>
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<tr>
<td>Level 2 Inflicted low-grade harm requiring no medical care</td>
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<tr>
<td>Level 3 Made a verbal threat with a plan to inflict harm</td>
</tr>
<tr>
<td>Level 4 Touched another in a threatening way</td>
</tr>
<tr>
<td>Level 5 Made a verbal threat without a plan to inflict harm</td>
</tr>
<tr>
<td>Level 6 Approached another in a threatening way</td>
</tr>
<tr>
<td>Level 7 Was loud and demanding</td>
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<tr>
<td>Level 8 Exhibited low-grade hostility (Owen, 1998)</td>
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Assessment tools were developed to be completed by various clinical staff members. Focus groups were established to gather staff input on the subject at hand. The assessment tools included a ward activity index, a staff level index, and a violence and aggression checklist. Staff members were required to record violent incidents and rate them according to Morrison’s criteria. Nursing unit managers were also required to complete a ward activity index that identified demographic data, diagnosis, and the
number of new admissions. They were also asked to identify the number of patients on their unit with a history of violent behavior. In addition the nursing unit manager was required to complete a staff level index, which identified factors that helped or hindered staff’s accessibility. Some items on this index included the number of experienced staff and the number of substitute staff who may or may not be familiar to the unit of placement. The researchers also evaluated the reliability of reporting incidents by performing a comparison analysis of reported incidents and hospital required incident report forms.

Results of this study found that 855 patients were admitted during the period of data collection. An equal number of men and women were hospitalized. The age of the patients ranged between 26 and 40 years and one half of the patients were detained involuntarily. “More than half of the patients in each study week had a diagnosis of schizophrenia or bipolar affective disorder” (Owen, 1998). During the study 174 individuals conducted 1,289 violent acts and 58 percent were rated in the most serious categories of Morrison’s Scales of Aggression. It was documented that 33 percent of the incidents occurred in the morning and 36 percent occurred in the evening. Only 21 percent of the incidents occurred at lunchtime. Typical staff responses to patients included verbal counseling, redirection, medication, removal or time out from the immediate situation, and physical restraint and or seclusion. The summary of incidents showed that 752 were seen as being organizational in nature. Many were preceded by a warning sign which frequently included agitation or threatening. Targets of these threats included staff nurses, property, physicians and psychologists. On 69 occasions a weapon was involved. A variety of staff responded to these incidents including police on five
occasions. Surprisingly, the occupational health and safety officer was notified in only 17 of the 752 cases. Staffing was also a factor in increasing the risk of violence on the unit. This study reported that risk increased when a significant number of both nursing and non-nursing staff were on leave. Patient population and mix also factored into the increased risk. The latter grew as the numbers grew in three significant populations – the potentially violent patients, those who were markedly disorganized and those who were detained in seclusion.

This study concludes, “Violence and aggression are a substantial occupational health issue” (Owen, 1998.). Nursing staff are the ones to frequently respond which makes one question the availability of other staff and security to respond to the situation at hand. Occupational Health and safety personnel were rarely notified, meaning that staff frequently did not report these incidences which put others in harms way, let alone not dealing with the most important issue of providing quality and responsive care to the client. Many of the incidents were precipitated with a warning sign. Had these been addressed, staff could have defused the situation by providing proper treatment. This study also identified “the factors that increased the relative risk of violence included some recognized in earlier univariate research – a history of violence, involuntary admission, increased nursing staff and planned absences by non-nursing staff” (Owen, 1998).

In another study by Dr. Cathy Owen titled Repetitively Violent Patients data was collected prospectively over a seven month period. The number of patents involved in violent incidents totaled 174. Of this total 12% were recidivists who accounted for 69% of the 752 violent acts recorded. The recidivists tended to be men with the diagnosis of
organic brain or women with personality disorder. When one of these patients became violent staff were more likely not to report the incident, as should have been done, by utilizing institutional mechanisms already in place. Other researchers, Noble and Rodgers, described a recidivist group that included younger patients, who tended to be more psychotic and more seriously violent. In other studies recidivists were characterized as having the tendency to show warning signs, having a positive history for violence and multiple hospitalizations due to psychotic features. Clients who have been diagnosed with neurological impairments, schizophrenia, personality disorder and who are detained involuntarily are also more likely to act violently repeatedly.

Dr. Owens study concluded that recidivists were more likely to be widowed clients, have a diagnosis of organic brain syndromes or personality disorders. They were also more likely to be detained under court order, and were significantly more sedated. Staff members witnessed, as reported previously, that recidivists were more likely to exhibit warning signs. However, in spite of the presence of these signs, acts were still committed and left unreported as noted in a previous study. This lack of reporting may suggest that staff members can become accustomed to the violent acts and often take this aggression in stride as just part of the job. Still, this stance by staff allows dangerous behavior to continue, putting workers, other patients, and the offenders themselves at risk. Yet, this attitude again puts workers, other patients and the clients themselves at risk.
Methodology

Assessments of risk are now frequently required at many mental health institutions and do not come without risks within themselves. Risk assessment or risk of dangerousness are terms frequently used with many variabilities. Several questions occur about their predictive validity or their usefulness as a tool when staff frequently does not complete them fully or may totally disregard them. However, most importantly, the assessment of risk and the subsequent labeling of a client as at risk of being dangerousness involves many moral and ethical challenges. “Especially in the human services field where the outcome of such assessments may have high social, economic and moral costs for clients or patients, their families and supporters, and society as a whole” (Carson, 1995). However, if used, they can provide us with information that will guide our treatment for clients who are at risk of hurting themselves or others. Our goal would be to provide proper treatment for each client based on the assessment and leading to the lessening of those uncontrollable needs to lash out and cause harm.

The term risk is used to describe two or more outcomes and can be either beneficial or harmful. Risk assessment is the method of calculating or assessing the likelihood of the different risk options. “Risk has two variables: an outcome, which may be good or bad, and a likelihood, which may be high or low” (Bingley, 1997). Acute hospitalization is usually required and justified many times by the threat of causing harm. “The American Psychiatric Association and the American Academy of Child and Adolescent Psychiatry publish criteria for short term treatment of acute
psychiatric illness and place diagnosis secondary to dangerousness" (Petti, 1998).

Utilizing the DSM IV, the client’s clinical picture is analyzed under five classifications, which tend to create a more overall clinical picture. According to Theodore Petti, Axis I represents only a portion of the whole clinical picture. Axis II can have “meaningful impact on the clinical presentation axis III and VI may or may not have an impact on the psychiatric disorder depending on the severity and extent of the factors” (Petti, 1998). However, Axis V may also provide more indicative indication of one’s ability to function and the need for acute hospitalization. “Danger to self and others is obviously a more compelling indicator of need for hospitalization than the independent presence of a psychiatric disorder” (Petti, 1998).

The literature has identified several factors that can lead to an increased risk of dangerousness. “Mood and psychotic disorders significantly increase hospital rates in multivariate analyses which controlled for demographic characteristics, site, and danger when relevant” (Gutterman, 1998). Decisions of the exact risk of dangerousness should be examined by combining ratings, the attention to danger and the existing diagnosis. One can not simply look at one or another factor individually. Typically, psychiatric diagnosis can be identified as the initial focal point in information gathering for patient records and can be an influential factor in determining the level of care a patient requires (Gutterman, 1998).

Some epidemiological surveys have shown a relationship between many categories of psychiatric disorders and self reported danger to others (Gutterman, 1998). Strong evidence for the role of psychiatric diagnosis in violent behavior comes from comparison among respondents categorized by diagnosis using data from three sites.
of the Epidemiologic Catchment Area Study (Gutterman, 1998). In comparison to clients without disorder adult males with affective disorder, schizophrenia, substance abuse, and mental disorder with substance abuse increased by a magnitude of 3:4, 5:4, 8:8, and 9:1.” (Gutterman, 1998). When analyzing women the probability of violent behavior was lower but the magnitude of increased incidence of violent behavior for a specific diagnosis was shown to be greater than in males (Gutterman, 1998). Dangerousness alone has been shown to be a major trigger for the need to be hospitalized. Clinicians and mental health teams need to upgrade their ability to assess dangerousness and “recognize the function of dangerousness as distinct from diagnosis” (Gutterman, 1998).

One cannot then make treatment decisions without the proper information. If this occurs it is clearly a clinical gamble, a gamble with the safety of clients, staff, and the general public. This fear of taking a gamble with the lives of others fostered the use of the term “risk” and, eventually, the use of risk management strategies in the clinical practice (Snowden, 1997). In order to eliminate this gamble both public and private hospitals have developed management programs to decrease the presence of risk and increase the safety of their patients and the public at large. An added bonus is the control of liability costs. Many quality management and assurance models were originally identified for industrial systems and have been adapted for the medical community.

In the development of risk assessment programs several steps must occur in order to have a quality clinical program of risk management. The first of these steps is proper risk identification which demands that the specific risks of each individual must be identified and recognized by the treatment team. Risk assessments should include and identify the risk in terms of severity or frequency. This can be completed by gathering
information from the patient, including his/her background, present state of functioning, and past mental state. Understandably this can be very difficult when our clients can come to the hospital or emergency room in an agitated or paranoid state. In addition it is important to identify the patient’s level of functioning socially and in the work place. Consideration must also be given to the environmental context in which the patient functions. Information can be gathered from the care team, the general practitioner, the mental health worker, relatives social workers, and those in the legal system. Lastly, but no less important, is the consideration of or note of the length or duration of a patient’s “episodes” since the severity and frequency of risk can increase or decrease with time. (Snowden, 1997).

Following a thorough review of the information a complete risk assessment report should be compiled. True clinical management is not just the identification of risk assessment information but the development of appropriate treatment strategies that can reduce the severity and frequency of the identified risks. (Snowden, 1997). “Clinical risk management should aim at more than avoiding litigation and must be integrated with clinical audit and other quality assurance activities” (Vincent, 1998). A complete clinical audit is a common method utilized to identify incidents and near misses that may occur and may not be consistently reported. “The examinations of individual incidents in a risk management programme is a powerful way of examining the factors implicated when things go wrong, but thorough change will require a range of quality and safety techniques embedded in a comprehensive strategy” (Vincent, 1998). Clinicians and the clinical team should lead in the development of the audit and the quality assurance process (Snowden, 1997). However, even with the use of “clinical audit comparatively
few studies focus directly on the causes of adverse events” (Vincent, 1998). Following
the use of critical incident and organizational analysis of individual cases one may
identify and illustrate the complexity of the chain of events that may have led to or may
lead to an adverse event or outcome (Vincent, 1998). Several root causes may be
identified and lie as interlocking factors which when intwined with each other, may lead
to an event. Some of these have been identified as communication and supervision
problems, excessive workload and training differences. When analyzing these factors
should an incident arise, one must not focus on the error of an individual but rather on the
organizational pattern and factors which contribute to the incident. The specific “method
is to examine the chain of events that leads to an accident or adverse outcome, consider
the actions of those involved, and then crucially look further back at the conditions in
which staff were working and organizational context in which the incident occurred”
(Vincent, 1998).

Problems or issues can be labeled as several types of failures. Active failures are
considered to be unsafe acts or omissions and can have immediate unsafe consequences.
Action slip or failure are also terms that are frequently utilized when one deviates from
safe operating procedures. Very often action slips or failures are due to cognitive
failures, memory lapses, or mistakes. When poor decisions have been made by
management and senior clinicians they are referred to as latent failures and when they
occur under working conditions they can be a catalyst for an unsafe act. Many factors
can precipitate a latent failures such as heavy workloads, inadequate supervision or
knowledge, rapid change within the organization, incompatible goals between
management and employees, as well as, conflict between financial issues and the needs
of the clinical services. Add to these factors poor system wide communication and maintenance of equipment or buildings and the chances for latent failure increase incrementally (Vincent, 1998)

To properly understand issues within an institution it is important to critically identify and evaluate the conditions of work and any associated latent failures. Factors that can influence clinical practice and are within the realm of institutional change are the following: institutional context which includes both the economic and regulatory issues, organizational and management factors which include financial abilities or constraints, organizational structure, policy and procedures, standards of practice, and the identification of safety priorities. The work environment can also influence clinical practice and it is intimately entwined with organizational issues, staffing levels, workloads, shift patterns, and the availability of equipment. More importantly, administration and managerial support can impact clinical practice either positively or negatively. Team factors are also of issue. One must incorporate team skills in order to have a good collaborative effort. These skills include proper verbal and written communications and the ability to seek supervision or help when needed. Individual factors also influence team factors and the total clinical practice. One must have a good knowledge base, skill performance, and self motivation as well as good physical and emotional health. Clinical competency is a "must" for all who are in the work place. Knowing the sources of information, protocols, and accurate test results can greatly improve the safety and success of quality management programs. As stated previously, patient characteristics also play an integral role within the management framework. The physical, mental and emotional condition of the patient and the complexity and
seriousness of the illness all impact on clinical practice and performance as do personality, social factors. Basic to determining all of these factors is the ability of all parties to communicate clearly. Each of the previous factors alone can be of significance, but when you combine and compound the factors you may have created the setting for a clinical incident that could be harmful. "The ultimate aim of even the most academic and theoretical approach is to help clinicians and managers to improve overall quality of care" (Vincent, 1998). Of major importance in the treatment of the potentially assaultive or self-destructive patient is the safety of all involved whether it be the patient himself, the clinician, other staff members or patients, or other identified victims (Alpert, 1997). A risk of dangerousness tool is of prime importance in establishing and maintaining a positive safe clinical environment.
Development of a Risk of Dangerousness Assessment at Cedarcrest Regional Hospital

As stated previously, quality management is using new approaches that utilize methods from traditional quality assurance models, while also incorporating new methods from the industrial arena of quality improvement (Coleman, 1995). Quality assurance involves the measurement of indicators that can be utilized to evaluate and monitor current care practices within a specific setting. Indicators have been labeled in two terms, sentinel event and rate indicators. Sentinel event indicators are typically referred through incidents that have a high risk attached to them and require a review of the event each time it occurs. A rate indicator is the term used to refer to events that are reviewed in the context of the specific trends and patterns of occurrence. "The process of choosing and developing indicators should involve identification of the indicator topic, the monitoring of objectives, data, collection mechanisms, and responsible staff" (Coleman, 1995). This is the precise process that occurred at Cedarcrest Regional Hospital under the direction of Dr. Roger Coleman, Chief of Professional Services. His study and conclusions have been documented in two articles entitled Contemporary Quality Management in Mental Health, and Quality Management in Mental Health II, Managing Risk of Dangerousness.
In January 1993, Cedarcrest Regional Hospital instituted a major structural system re-organization that eventually led to the development of the Risk of Dangerousness Assessment currently used at Cedarcrest Regional which will be evaluated in the current study portion of this work. The re-organization incorporated the ability to utilize quality management principles to improve clinical care. It also developed a program rather than a specific line discipline or authority and created the ability to utilize and create clinical indicators to influence clinical decisions and care.

This reorganization provided the opportunities to centralized quality improvement and influence treatment decisions or even change a treatment approach when called for. The traditional separation of staff by disciplines was abolished. Program staff was made accountable to program directors and division directors. The division directors were then made accountable to the hospital superintendent and Chief of Professional Services. By completing this reorganization conditions were created for improved quality of care and improvements in the quality improvement process. Communication was open throughout the system, not just in individual disciplines. With those in authority taking a vested interest in the day to day clinical procedures, frontline staff could understand fully the importance of stress on quality care with the system approach to administer it.

Cedarcrest Regional Hospital is an acute psychiatric care facility located in Newington, CT. Following a successful system change and implementation of specific clinical indicators to monitor restrictive and permissive clinical decisions it became apparent that the population being admitted and treated at the facility fell into the category of the acutely ill, the gravely ill and the potentially dangerous patients (Coleman. 1995). With the increased awareness of the increased risk of violence
Cedarcrest's leadership identified the need to develop an “instrument to improve clinical staff’s focus on, and ability to assess, risk of dangerous behaviors” (Coleman, 1996). During this time of exploration and development of an instrument to assess risk of dangerousness Dr. Coleman, along with his management team, instituted several vehicles for quality management. Clinical management rounds and tracking meetings to review current clinical performance were put into place. Reviewing indicator-based data and risk of dangerousness completed this review. “Clinical managers and frontline clinicians review patients in a focused manner, indicator by indicator with appropriate follow-up plans, corrective actions were implemented immediately” (Coleman, 1996). The use of clinical indicators, guidelines and specific criteria allowed the hospital a systematic review of care. This dovetailed with the national incentives directive to promote quality of care outlined by the American Psychiatric Association and the Joint Commission on Accreditation of Healthcare Organizations. Clinical performance can only improve by using this standard approach incorporated with uniform assessments.

“Clinical supervision once solely the approach to promoting clinical quality must remain a major contributor to such efforts” (Coleman, 1996). The ability of an institution to train students and staff to promote the institution’s mission statement should also encourage and strengthen the quality of care. The above activities have been replicated and developed at other institutions as well, but the originators at Cedarcrest hastened to state “that as important as the activities are themselves is the concept of viewing them as components of a whole and not merely as isolated quality improvement tasks. “It is this integrative aspect of our work that may be most significant in promoting the success of the hospital’s performance improvement efforts” (Coleman, 1996).
In order to create the risk of dangerousness assessment, management staff utilized the standard technique currently used in industrial quality control — the main goal is to prevent an adverse event from occurring. By using concepts based in risk management and probability theory, staff realized that "we can not predict dangerous behavior we can ascertain risk factors that point to increased probability of risk of dangerousness" (Coleman, 1996). Management also concluded that risk factors are cumulative. The greater number of risk factors may cause an increase in the probability of the occurrence of dangerous behavior.

After a detailed literature review the initial plan involved developing and identifying all of the possible risk factors that could have been utilized in a standard assessment. Some of the items identified included standard questions on the patients' thoughts, behavioral or intention items, wishes or intents on violence and the realities or opportunities to complete the plan. Questions included the targets of the intended violence. The next item identified was a hierarchical list of current aggressive or violent behaviors ranging from low-grade hostility to infliction of harm to self or others requiring medical attention. Patient diagnostic or symptomatic risk factors were also identified such as past history, decompensating psychosis, and change and reduced levels of antipsychotic medications. Also categorized in this area were neurologic abnormalities, violent suicide attempts, and alcohol or drug abuse. Environmental factors included abusive family environment or childhood, and/or any acute illness, particularly schizophrenia as a youth. Another category was identified as change in thought processes, such as conceptual disorganization, tension, suspiciousness, hallucinatory behavior, disorganization of thought content or unusual thought content. Has there been
a military combat experience, or are there the demographics of young male, from an environmental context where there may be poverty, disrupted family life or decreased social abilities. Following this identification of possible risk factors an assessment form was developed as a way to manage and oversee the risk of dangerousness patients at Cedarcrest hospital.

In order to develop the form hospital leadership allotted for release time from daily duties to participate on a “criteria development task force” which consisted of 8 clinical leaders. Based on the literature the task group utilized their specific knowledge of their patient population and chose criteria that would likely be predictive of dangerous behavior at Cedarcrest.

The first meeting was held on October 26, 1994. A total of eight staff members were in attendance, including several department heads, physicians, and a quality assurance professional. The group was requested to individually evaluate clinical work done at the hospital utilizing a specific measure to quantify the criteria measure. Staff was requested to estimate two items, the True Positive Rate and the False Positive Rate using current criteria evaluation from the literature, specifically the Risk of Dangerousness Evaluation, APA Practice Guidelines, and JCAHO Indicators for Patients with Major Depression. Staff also estimated the positive predictive value for each risk criteria, positive predictive value being the probability of dangerousness given the existence of a given criteria.

The December 7, 1994 meeting consisted of reviewing the statistical analysis of each task force committee member’s individual results. Such an analysis utilized positive predictive value (PPV) to identify items that appeared to be predictive of increased risk of
dangerousness. In general, items included in the Risk of Dangerousness survey following statistical analysis had a mean and median estimate PPV greater than PPV for chance admissions. The results were as follows: with an N of 8 the task force arrived at a mean value of 41.43 as the probability of dangerousness for any given admission to Cedarcrest. When using median scores, items with a value greater than 30 appeared to be more predictive of increased dangerousness. The following is a list of behaviors that staff felt to be more predictive of a risk of dangerousness. They are listed in order of highest predictive value.

1. The patient is showing unpredictable outbursts of dangerousness behavior
2. The patient is showing intent, plans or behavior that is dangerous to self or others
3. The patient is showing escalating agitation or aggression
4. The patient has a diagnosis of anti social personality
5. The patient has a history of dangerousness to self or others
6. The patient has delusions or hallucinations compelling the patient to be dangerous to self or others
7. The patient has a diagnosis of borderline personality
8. The patient is likely to abuse alcohol or drugs
9. The patient will be returning to a dangerous environment
10. The patient is making threats towards self or others
11. Recent behavior within one week suggesting dangerousness to self or others
12. The patient has paranoid symptoms
13. The patient is suicidal
14. The patient is non-compliant with medications

Task force members reviewed the criteria identified as being predictive of dangerousness and specific items were included in the instrument. Clinical leadership reviewed all patients who were currently hospitalized at the time of development with members of their specific treatment team and "revised criteria and scores in the assessment instrument based on their review" (Coleman, 1996). Changes that were made following clinical review included the acknowledgement that substance abuse as presented in the instrument is not predictive of dangerousness. Since many of mental health clients use substances to self medicate it was deemed necessary to change the item question to the occurrence of dangerous behavior in relation to substance abuse. The item questioning if the patient were returning to a dangerous environment was not predictive, but task force members agreed on the need to include this item because its importance of including this in one's knowledge base for discharge and treatment planning.

Along with the development of the Risk of Dangerousness Assessment, "clinicians and managers developed an oversight mechanism to assure staff utilized the indicators and assessments correctly" (Coleman, 1996). The importance of clinical risk management was so strong that the hospital developed centralized monitoring efforts as well as additional indicators to monitor their ability to identify and treat patients who are at risk. Pure sampling of items that may be predictive of dangerousness may also predict adverse events, but, the "Goal was to use indicators to predict potential adverse events and to take action to prevent these events from occurring" (Coleman, 1996).

This utilization of a consistent procedure to assess clinical risk enhanced the ability to identify and treat potentially dangerous patients appropriately. Centralized
monitoring promoted the integration of quality improvement into everyday proceedings at the hospital and provided rapid, immediate feedback between management and clinical staff. To enhance the management of the system and increase quality improvement measures a closed loop approach was also implemented so as not to miss details.

Clinical management rounds were implemented to occur weekly. These meetings are an organized manner of evaluating patients utilizing an indicator based review approach to identify key aspects of patient care, especially those clients of high risk. In attendance at these meetings are clinical leadership, team members, with these members in attendance changes can be acted upon immediately when identified by the entire team. Clinical leadership can include, chief of professional services, director of hospital operations, service division directors, quality improvement manager, utilization review coordinator and community liaison manager. Clinical team members included psychiatrists, program directors, nursing, and social service staff. Daily tracking meetings occur allowing the Director of Hospital Operations or the Chief of Professional Services direct program directors and psychiatrists in the proper identification of risk of dangerousness among currently hospitalized patients.

Results of this endeavor utilizing twelve months of outcome data identified a steady and consistent reduction of restraint and seclusion hours after the tools were in operation for seven months. This “organized focus on risk of dangerousness resulted in a sustained improvement of clinical outcomes related to dangerous behavior” (Coleman, 1996). Clinical managers and frontline clinicians were both afforded valuable time and rallied an effort to develop an effective approach to manage patients who were at risk of being dangerous.
The Current Study

In August of 1997 the Chief of Professional Services at Cedarcrest met with the author to assess whether the Risk of Dangerousness Assessment was continuing to be effective as a screening tool and if any additional modifications needed to be made. A very basic question dealt with the screening tool. It would be important to know if the tool was being used being utilized similar to the inception of the original project. One issue related to the use of the tool as an enhancement of staff development and inservice training. Related to this issue was the question about training on the continued issue of hospitalization of dangerous patients.

To address the issue a retrospective chart review was conducted on the records of all patients who were discharged during the months of September and October of 1997. A total of 69 discharges occurred during that time. Two charts were unavailable for review, creating an effective yield of 66 charts reviewed in total. The eight data displays at the conclusion of this chapter report the current findings. Figure 1 is the graph supporting the current study demonstrating the exact number of incidents of assaults, restraints or seclusions versus the total number on the risk evaluation that was completed upon admission. A complete analysis of this specific graph will be discussed later within this chapter. During this period 59% of the population discharged were male and 41% were female as seen in Figure 2. The age of patients varied and ranged from 19 to 63.
Of the population discharge from Cedarcrest (Figure 3) during the time of this review, 59% were between the ages of 19 and 41% were over 35. Figure 4 represents the race or ethnicity of the clients discharged with a total of 57% white, 21% hispanic, 20%, black and 2% asian. Figure 5 details the exact number of admissions to Cedarcrest Hospital. First time admissions comprised 57% of the total population, 13% were second admissions and the other admissions represented patients who had been admitted from 3-15 times to Cedarcrest alone. When reviewing many of the charts it was noted that many patients might have been admitted to other mental health institutions either within Connecticut or in other states before coming to Cedarcrest. Of all of these admissions only 18% were on a voluntary basis, 82% of the patients were detained on a physician’s emergency certificate (PEC) as they were deemed to be of danger to themselves or others. When evaluating the charts it was apparent that many of the patients had some type of violent incident to either themselves or others or were acting in a bizarre or dangerous behavior which precipitated the hospital admission. Length of stay is depicted Figure 6, stating that 60% of the hospitalizations ranged from 2 – 30 days. The other 40% ranged from 31 to greater than 150 days. Figure 7 depicts the exact risk evaluation scores. The scores on the 100 point scale ranged from 0 being the lowest to 71 being the highest. A total of 74% of these scores fell in the 0 – 22 category, with the remaining falling in between 23-71. Many of the 23-71 scores were attained by people on a small group or individual basis. In Figure 8 one can identify the number of incidents versus the length of stay. Clearly in this diagram it is evident that clients who have a longer length of stay have an increased chance of having either an assault, time in restraints or seclusion. The number of incidents was dramatically increased for those who were
hospitalized over 65 days. This effect has been documented in the literature as well and can certainly be supported by the fact that the severity of the illness, necessitates a longer length of stay for the patient and increases the potential for dangerous behavior or incident to occur. When one evaluates Figure 1 in detail there is a clear finding that several incidents occurred by patients with a risk score of zero, meaning that upon admission one believed that the probability of Risk of Dangerousness was low and did not warrant concern. In fact 10 incidents occurred by clients who received this score. While this rate may not be acceptable when trying to decrease restraint and seclusion hours, it could be explained by the fact that some clients may have a change in indicator status after admission suggesting that there should be a second review within the clinical management rounds. Of more interest is the number of incidents that occurred by clients who scored in the 18 – 23 category on the Risk of Dangerousness Assessment. One could attribute this fact to the assumption that 18-23 are low indicator total scores on a 100-point scale. According to these data one should pay closer attention to scores that fall in this category. The decreased number of incidents occurring within the higher range of scores could indicate that despite the high scores, the patient is in the hospital and receiving the proper treatment, the risk of dangerousness decreases dramatically. The two incidents that occurred by the client who received a Risk of Dangerousness score of 58 is actually a good outcome since this client had increased clinical indicators for the potential to be dangerous.
Figure 1. Number of Incidents vs. Risk Evaluation
Figure 2. Gender

- Male: 59%
- Female: 41%
Figure 3. Age of Patients

- 26-30: 27%
- 31-35: 18%
- 36-40: 12%
- 41-45: 18%
- 46-50: 3%
- >50: 8%
- 19-25: 14%

Total: 100%
Figure 4. Race

- White: 57%
- Hispanic: 21%
- Black: 20%
- Asian: 2%
Figure 5. Number of Cedarcrest Admission
Figure 7. Risk Evaluation Scores
Figure 8. Number of Incidents vs. Length of Stay
Conclusion

The problem of dangerousness within the mental health programs is faced by each and every professional in these settings. A quality improvement approach to prevention, system focus, understanding of variation, and the development of conceptual tools are all efforts to promote quality of care. Various disturbances and even violent episodes have occurred leading to injuries to the patient, to others in the institution or, even more broadly, to the general public should the client not be within a healthcare setting. The current study originated with Dr. Roger Coleman as he strove to create an instrument to assess the problem and involve a team approach to its solution in order to realize a decrease in assaultive behavior. Utilizing the Risk of Dangerousness Assessment as the tool to focus system change and intervention, Dr. Coleman’s plan decreased the use of chemical and physical restraints and increased the focus and attention of staff to the particular indicators of individual patients and their needs. The scope of the current study, though limited in the number of subjects, bears out Dr. Coleman’s original contentions by documenting a reduced number of assaults, restraints and seclusions when the team approach was operational. Obviously a broader study would elaborate on these findings. In order to increase the validity of the findings reported. The author would
propose four means by which these efforts could be strengthened to meet the goal of better serving patients by reducing the trauma of injury from themselves or others.

Firstly, the author sees the need for increased chart audits. The clues to impending problems are often given by patients themselves if we were only able to detect them and act upon them. Careful, perceptive charting by all involved can be instrumental in having a plan ready when, and if needed.

Secondly, in the same vein, all on-going interventions should be closely monitored and documented so as to keep the staff alert to significant changes, indicators and warnings. Though the setting seems the same to the naked eye the circumstances surrounding a particular case and its intervention seldom stay static. All professionals involved glean various parts of the total picture. These should be shared orally in conference and consultation settings and in writing clear straight forward notes for others to be completely brought up-to-date for as long as the patient remains hospitalized. The record should tell the story by all involved.

Thirdly, in reviewing the Risk of Dangerousness Assessment scores of a particular group should be given closer attention than has been given to date. The group with scores that fell between 18 and 23 are normally considered to be fairly low but these client's proved to have a disproportionate number of incidents relative to their scores would indicate. This needs further study and new methods of intervention. One person alone will supply only part of the picture and the outbreaks are not the fault of any one person. This calls for a team approach.

Lastly, the Risk of Dangerousness Assessment should not be considered definitive. Particularly in the case of clients having a stay of over 30 days in a health
setting. The patient can change from day to day, week to week, etc. and surely if a month has passed and he has been exposed to various treatments, procedures, and counseling, some changes have likely taken place within himself and all around him – new patients, new staff, and new dynamics. It is time for reassessment. X-rays are compared overtime for identifying changes, both good and otherwise. Likewise, the assessments tool can be given again and compared for advances, maybe no changes, and also unhappily, retrogressions. Professionals need every hint, clue, fact and observation to record and to better know patients who are multi-faceted.

Dr. Roger Coleman, truly a Connecticut pioneer in this area wrote, “Positive results, like positive diagnostic findings point to a probability of the presence of a quality related issue” (Coleman, 1995).
Appendix

RISK OF DANGEROUSNESS
KEY ITEMS FOR THE ASSESSMENT OF CURRENT DANGEROUSNESS

<table>
<thead>
<tr>
<th>ITEM</th>
<th>SCORE</th>
</tr>
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<tbody>
<tr>
<td>(Behavioral/Intentional)</td>
<td></td>
</tr>
<tr>
<td>1. Is the patient currently showing intent, plans or Behavior that is dangerous to self or others?</td>
<td>14</td>
</tr>
<tr>
<td>2. Is the patient showing escalating agitation or Aggression?</td>
<td>10</td>
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<tr>
<td>3. Is the patient showing unpredictable bursts of Dangerous behavior?</td>
<td>14</td>
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<tr>
<td>4. Is the patient making any threats toward specific, Identifiable potential victims or other serious threats of Dangerousness to self or others?</td>
<td>4</td>
</tr>
<tr>
<td>5. Is the patient expressing suicidal intent or plan?</td>
<td>4</td>
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<tr>
<td>6. Is the patient refusing or noncompliant with medication?</td>
<td>3</td>
</tr>
<tr>
<td>7. Recent dangerous behavior (within past week, approximately)</td>
<td>4</td>
</tr>
<tr>
<td>8. Substantial, repetitive past history of dangerousness to self or others.</td>
<td>7</td>
</tr>
<tr>
<td>(Diagnostic/Symptomatic)</td>
<td></td>
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<tr>
<td>9. Does Dangerousness occur in relation to abuse of alcohol or drugs?</td>
<td>5</td>
</tr>
<tr>
<td>10. Delusion or hallucinations compelling patient to be dangerous to self or others?</td>
<td>7</td>
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<tr>
<td>11. Does the patient have significant paranoid symptoms or paranoid schizophrenia?</td>
<td>4</td>
</tr>
<tr>
<td>12. Dangerousness associated with depression or mania?</td>
<td>4</td>
</tr>
<tr>
<td>13. Does the patient have an antisocial personality disorder?</td>
<td>8</td>
</tr>
<tr>
<td>14. Does the patient have a borderline personality disorder?</td>
<td>7</td>
</tr>
<tr>
<td>(Environmental)</td>
<td></td>
</tr>
<tr>
<td>15. Is the patient returning or going to a dangerousness environment or to an environment where past dangerous acts have occurred?</td>
<td>5</td>
</tr>
</tbody>
</table>

TOTAL SCORE-------------------

IF ANY OF THE ABOVE ARE PRESENT, THEN ASSURE PATIENT’S/OTHER’S SAFETY. ASSESS FOR IMPENDING PSYCHIATRIC EMERGENCY, REVIEW MEDICATION REGIMEN AND TREATMENT PLAN EMPHASIZING APPROACHES TO DANGEROUS BEHAVIOR. (Coleman, 1996)
Bibliography


