Theater Safety Purpose

Participation in K-14 theater can have many benefits including the development of improved reading comprehension, self-concept, and empathy. In the world of professional theater, each design area has its own department head and several levels of subordinate assistants and workers. However, in the K-14 theater domain, one person often assumes all these roles in addition to his or her regular responsibilities of teaching. Not many people see theater as being dangerous when compared to sports, science laboratories, or vocational education. However, it includes many of the same risks. There are many factors that influence theater safety. These factors include:

- the education, certification, and training of theater educators;
- the makeup and expectations of theater;
- the training and directions of actors and crew; and
- theater safety and hazards.

Theater workers are constantly exposed to hazards—dangerous machinery, mist, smoke, fog, potentially toxic materials such as powdered pigments, dyes, fireproofing chemicals, plastics, resins, spray adhesives, and glues, welding materials, cleaning solvents, sawdust, asbestos, firearms, pyrotechnics, and many kinds of paint. Exposure to these hazards can cause a wide range of reactions from allergies to asthma attacks, to potentially fatal illnesses such as skin and lung cancer, hepatitis, leukemia, heart failure and damage to the central nervous system. In addition to those hazards, electrical shock, burns, falling from heights, and falling objects have caused injuries to theater workers. Overhead rigging systems present their own benefits and challenges. While the use of a counterweight rigging system reduces the need for students to climb tall ladders, it also contributes its own set of risks.

Even for a theater specialist, the responsibilities of teaching in addition to being the resident expert on directing, acting, scenic design, structural engineering, set building, lighting design, lighting technology, sound design, sound technology, costume design, costume construction, and theater management is daunting. After all, most university theater programs offer separate degree concentrations for those wishing to pursue a career in performance, arts administration, technology and design, and theater education; some even offer specialized tracks within each general field both at the undergraduate and graduate levels. The combination of the lack of theater teacher preparation programs, the lack of theater certification, and the reduction in the number of theater teachers at
individual schools increases the likelihood of theater courses and activities being led by individuals who are untrained or inadequately trained in the theater arts. Dependent upon each school's facilities and production capabilities, theater teachers are often asked to perform tasks challenging their levels of training and comfort. If such teachers are responsible for supervising all areas of theatrical production, they may expose their students and patrons to safety hazards. Such teachers and their schools may be more susceptible to liability risks.
Facilities

Most K-12 school theater programs have one performance space. Approximately 27 percent have two. Roughly 50 percent of K-14 schools have a stage that was built specifically for theater, 33 percent use a general auditorium, eight percent use a cafetorium, three percent have a black box, and 10 percent use some other non-theater space. Over 60 percent of schools do not have specialty theater features such as a scene shop, costume shop, fly gallery, or orchestra pit.
Number and Type of Classes

Eight-eight (88) percent of American high schools offer theater-related classes and/or activities. Of the schools that offer theater classes during the school day, about one-third of the teachers teach only theater-related courses. In another third of schools offering theater, theater courses make up less than 25 percent of their theater teachers’ overall course loads, and the rest fall somewhere in between. The most common courses offered in discrete areas of theater were in tech/design (29 percent) and acting (27 percent).
Number and Type of Productions

The average K-14 theater program produces one full-length drama, one full-length musical, and one or two one-act productions annually.
General Safety Guidelines

Theater instructors must give verbal instructions and model proper technique. Students must be given guided practice until they demonstrate proficiency. A technical theater program may include some or all the following high-risk activities:

- use of electricity,
- work at heights or in darkness,
- use of power tools,
- working with hazardous chemicals,
- rigging,
- walking near or on traps and other inconsistencies in the stage floor,
- flying of actors,
- use of guns and ammunition,
- use of pyrotechnics, and
- use of welding equipment.

General safety considerations

Theater is not often considered to be an area of risk by administrators even though they included elements that were similar to athletics, science laboratories, and vocational education. However, theaters are extremely risky. As such, general safety dictates some standard rules as follows:

- No running, joking around, or any other type of “horseplay” is allowed.
- Lift heavy objects properly.
- Always leave the shop and other work area clean (i.e., practice good housekeeping.
- Leave storage areas organized and neat.
- Accidents should be reported immediately.

Safety Rule Number One: *Think before you act.*

The most important rule of theater safety is to always think about not only what is happening, but to also think about what could happen—and what could go wrong.
Safety Rule Number Two: *If you don’t know or are not sure, ask.*

Training is always required before doing a task. If uncomfortable or unsure about something, ask the person in charge. Most accidents happen when a person is attempting something they really don't know how to do, or they are so nervous they don't have a real sense of control over what they are doing.

Safety Rule Number Three: *When appropriate, use safety guards.*

Part of training is learning to use tools and equipment safely and properly. For example, power equipment has safety guards. Although guards may seem to be an annoyance, they are there for a purpose—to protect you and those around you. Always leave the guards in place and use them properly. Also, be sure to use such aids as a push sticks or clamps when having to cut very close to the blade.

Safety Rule Number Four: *Always use appropriate personal protection equipment (PPE).*

Be sure to wear personal protection equipment as required. Wear breathing protection when working with anything creating small dust particles or vapors, such as spray painting. Wear hearing protection when working with loud tools, especially electric saw, routers, and planers. Wear vision protection when working with any tools creating flying pieces, which includes most of the tools. Generally, wear eye protection whenever you are working in the theater. Wear hard hats during construction and striking

**Theater hygiene**

To promote a safe environment, when feasible, personal hygiene requirements should include:

- Always wearing hard soled/closed toe shoes,
- Never wearing loose fitting clothes around power equipment,
- Tying back long hair,
- Wearing goggles/face shields or safety glasses while using power equipment,
- Wearing ear muffs/plugs if around loud noise for a long time,
- Wearing gloves to protect against cuts and solvents, and
- Being sure to wash hands with soap before eating and after work.

When working in the shop, other safety rules may apply—no jewelry, rings, etc.
Working on ladders and scaffolds presents a potential for a fall. If using a ladder, always have someone there to foot and hold the bottom. Do not stand on the top or any steps the safety labels indicate. Before getting on a ladder, make sure that all four legs are firmly on the floor. Remember not to leave tools and hardware or anything heavy on top of a ladder. This will lead to the next person who moves the ladder getting hit by a falling object. When working above a ladder, be vigilant.
Theater Safety Equipment

Equipment used in theater should meet current safety standards and be inspected regularly.

Fire curtains

This should include fire curtains. Fire curtains are designed to protect the audience from flame, smoke, and fumes in the event of a fire. ANSI standard E1.22 requires that a qualified professional from a rigging company inspect the fire curtain annually. NFPA 701 stipulates that all stage curtains be flame treated. Case law mandates that "the supervisor of the activity is responsible for the upkeep of every piece of safety equipment."

Technical theater tools

Lack of eye protection or saw guards could violate child labor laws. The NFPA also sets standards for the use of flame effects and pyrotechnics before a proximate audience. These standards are NFPA 160 and 1126, respectively. These documents stipulate the standards for the transportation and storage of materials, permit requirements, and operator qualifications. Both documents state that final approval from the local Authority Having Jurisdiction (AHJ) is required before these effects are allowed in a production.

The use of stage rigging allows work to be done without having to climb ladders. This makes some work safer for students, but can cause other hazards if used incorrectly. Working with counterweight fly systems can be dangerous in schools. Several factors could show negligence, and the most common problem is a lack of training of the teacher. There are not any national standards for operating a fly system, but attending rigging seminars or bringing in a rigging expert for presentations can help. Several warning signs to look for in a fly system are as follows:

- Damage to a runaway line set can be sudden and catastrophic
- Damage by allowing the arbors to hit the top or bottom stops can be slower and more insidious
- Keep written records of problems and repairs,
- Communicating repair and replacement needs to administration, and
- Schedule annual rigging inspections by an outside rigging professional.

Automated rigging systems present advantages such as eliminating the need to use counterweight to balance the system. However, heavy items are still being hung over
people’s heads and thus, the same precautions should be taken. This includes a theater facility rented for productions. While the people who run the building would be partially responsible, liability could still fall back to the school and/or the teacher.

Standard warnings

When working in theater, use unambiguous warning terms when working on the stage. For examples,

- “Heads up!” means something above your head is moving or falling
- “Clear!” means move out of the way of danger; falling objects
Theater Safety Regulations

Theater accidents can cause ailments ranging from minor injuries to death. Many workers are protected by standards set by OSHA regulations. The following regulations apply to theater (the regulation's title and section follow the description):

- Scaffold Regulations (29 CFR 1910.28 and 29 CFR 1926.451)
- Powered Industrial Lifts (29 CFR 1926.178)
- Medical Services and First Aid (29 CFR 1910.151, 29 CFR 1926.50)
- Occupational Noise Exposure (29 CFR 1910.95 or 29 CFR 1926.52)
- Asbestos in Construction (29 CFR 1926.1011)
- Hazardous Waste Operations/Emergency Response (29 CFR 1910.120)
- Flammable and Combustible Liquids (29 CFR 1910.106 or 29 CFR 1926.152)
- Sanitation (29 CFR 1910.141)
- Confined Space (29 CFR 1910.146)
- Biological Hazards
Theater Accidents

35.7 percent of theater programs have experienced some type of theater related accident or injury. Of these, 100 percent had experienced an accident or injury during scenery or prop construction. Those scenic or prop construction injuries were believed to be the result of:

1. lack of attention (60 percent),
2. normal use (60 percent),
3. horseplay (40 percent), and
4. sharp objects (20 percent).

The scenic and props construction injuries occurred while using:

1. cutting tools (20 percent),
2. power tools (20 percent),
3. heavy items (20 percent), and
4. other (40 percent).

The scenic and props construction accidents resulted in:

1. bruise (60 percent),
2. minor cut (60 percent),
3. concussion (40 percent),
4. severe cut (20 percent), and
5. other (20 percent).

Most accidents occurred the results were:

1. building the show (100 percent),
2. installing the show (20 percent), and
3. striking the show (20 percent).
Theater Safety Best Practices

Anyone who has visited a school theater during play preparation can relate to the fact that it often looks like organized chaos. Sets are being constructed, props and costumes are being designed, and cast members are working on their lines and choreography. Along with the excitement of an upcoming theater production is the very real concern of serious injury to those involved. Before any theater activity is allowed to take place, consider the following best practices:

Permission and Training

Before any theater production begins, adequate training must be provided to all staff, students, and volunteers so they understand the expectations and requirements of the school district. Volunteers often overlook the fact that their actions (or lack thereof) may present significant liability exposure to the school district.

Exhibits 1 through 4 that are part of these guidelines document examples of permissions, waivers, and procedures that should be in place prior to using any students or adult volunteers in a theater program. Once signed documentation is in place, appropriate background checks and trainings should be conducted. For both students and volunteers, a standard orientation covering such topics as safety, bloodborne pathogens, sexual harassment, etc. should be administered and documented. In addition, develop policies and procedures that will be followed for use of equipment and machinery: During set construction, play practice, and performances, policies should address the safety training that is required for students and volunteers as well as the safety rules that must be followed. As a rule, students should not be allowed to operate potentially dangerous equipment such as table saws, radial saws, circular saws, etc.

Supervision

Adequate supervision is a key element in maintaining a safe environment. No potentially dangerous activities should take place unless proper supervision is present. Supervisors are there to oversee activities. Supervisors should not leave the area and leave students alone—especially when in involved in activities such as set construction, lighting, etc. Remember to ensure that all supervisors have their cell phones available in case of an emergency. Students should never be allowed to work unsupervised during or after school hours. Theater volunteers should be trained to adequately understand the liability concerns associated with a lack of supervision. Only those trained by a qualified instructor should be allowed to use or operate hand or power tools. All operators of any power tools should be required to read and understand the operating manual and safety requirements prior to operation. Power tool safety guards shall never be removed, by passed, or altered for any reason.
'Flying' Safety Concerns

'Flying' actors in approved safety harnesses requires strict safety controls including utilization of a reputable flying effects company to train the actors. A reputable flying effects company will train your participants how to properly wear a safety harness as well as how to safely operate the flying controls. Ensure proper harness training is provided. Two types of harnesses are commonly used—two-point seat harnesses and full body harnesses. It is critical to ensure students are trained and each harness is inspected before each use. This means that it fits correctly and securely before being lifts. Never allow unauthorized individuals or students to use the harnesses. Never allow flying over the audience. Limit 'flying' height to no more than 10 feet. Designate a 'safety inspector' who will be responsible for inspection of equipment—checking anchor points, cables, harnesses, etc. Ensure emergency rescue procedures are in place if needed.

Facility Safety Concerns

Provide special markings to identify orchestra pit openings and any other significant changes in elevation. An orchestra pit cover should be in place whenever the pit is not being used. Consider using a removable guardrail before and after performances until the pit cover is reinstalled. Install a low voltage rope light or reflective tape to identify where the stage ends. Many performers have fallen off the stage because the edge of the stage was not clearly marked. All aisles and passageways must remain unobstructed always for pedestrian access. Ensure that props, stage scenery, wheelchairs, etc. never obstruct these areas at any time.

Before any trap doors are used in any theater productions, ensure that the District safety coordinator has approved its use. Lock all trap doors when they are not in use. Other than the actual use of the trap door during a performance, the trap door must remain closed when the activity involving the trap door is completed. The instructor should be the only person allowed to remove the padlock on the trap door. Line all trap doors and floor openings with yellow reflective safety tape to increase visibility during low light conditions.

Provide protective railings for all runways, stairs, platforms and trap doors. The railings must have a top rail, mid rail, and toe board. A vertical height of 42 inches from the upper surface to the top rail must always be maintained. When access from one structure to another must take place for travel between different levels, a fixed stairway should always be used. Every stairway having four or more rises must be protected with a standard railing on all open sides. Handrails need to be provided on at least one side of an open stairway. If stairways are constructed in-house, they should be inspected and approved by the District safety coordinator and maintenance supervisor prior to use.
Review seating and circulation layouts to reduce or eliminate traffic flow conflicts. Suspended lighting/scenery equipment, cabling, hoisting equipment should be safe and in good condition. Stage lighting and electrical equipment controls must be located in locked panels. Stage and other draperies or hangings must be non-flammable or fire-retardant. If your theater uses a fire drop curtain, paint a reflective line on the stage floor to indicate the curtain drop area. This area must be kept clear at all times. Remember, drop testing of the curtain must be conducted yearly by a certified contractor. If multi-level structures are used in theater productions, plans must be submitted an approved by school administration before construction begins.

Props

Before any special props are used, they should be approved at least 30 days prior to the theater production. The use of open flames must be strictly monitored. ASCUP may be able to provide insight as to what constitutes acceptable and unacceptable props. Any props that are gasoline fueled or combustible powered must be prohibited at all times. Real weapons, such as knives and guns, should never be allowed. If a stage prop presents the risk of fire or injury, it should be fire proofed and approved by school administration and the local fire department.

Prohibit pyrotechnics and other potentially dangerous special effects: The best practice is to always prohibit pyrotechnics on school property. If your District allows the use of pyrotechnics, they should be used outdoors, and only operated by a licensed pyrotechnic technician. Make sure the pyrotechnic technician has indemnified the District with respect to its use and provided a certificate of insurance to your District with limits of at least $1 million per occurrence that covers pyrotechnics liability and names the District, its Trustees, employees, and agents additional insured.

Catwalk Safety Concerns

Safety cables must always be used to attach light fixtures to the catwalk frame. Ensure the access to catwalk areas is strictly controlled. Catwalks must be equipped with appropriate handrail and guardrail protection. Trained students should only be allowed on the catwalk after they are trained, and the instructor is present. Never allow storage of any materials on the catwalk.

Housekeeping

Maintain good housekeeping practices in your storage areas to prevent the accumulation of materials that present tripping exposures and fire concerns. Theater work rooms are
notorious for bad housekeeping conditions, improper storage of flammables, and unsafe product storage. Uniformly stack, block or interlock all stored materials to prevent them from sliding or collapsing. Limit the height of all stored materials to prevent them from tipping over on to someone. All combustible and flammable materials should be stored in a fireproof cabinet or room.

**Student Safety Concerns**

All students participating in a theatrical production shall be required to provide permission forms, waiver forms, medical authorization forms, and be trained in accordance with District theater rules prior to participation. These signed contracts should be maintained on file by the instructor. Never allow any students to perform electrical activities. Additionally, students should never be allowed in any type of electrical wiring activities. A master electrician should always perform these duties. Always closely monitor any students who use ladders. The maximum height that a student should climb ladder should not exceed three feet. Do not allow students to operate any type of aerial lifts during theater production set up. Never allow students (or anyone else who is untrained) to build or use scaffolding.

Theater productions inherently present several serious accident and injury exposures. The manufacturing of sets, use of power/hand tools, working at elevations, and material handling exposures are ever present. Take the time to ensure proper safety protocols have been addressed, always provide supervision, and ensure proper training to ensure a safe and entertaining show.
WAIVER, RELEASE AND INDEMNITY AGREEMENT
ASSUMPTION OF RISK FOR PARTICIPATION IN VOLUNTARY CLASS/ACTIVITY

Participant: ____________________________________________________________

Description of Class/Activity: ____________________________________________
Name of School: _______________________________________________________
Date(s) of Class/Activity: _______________________________________________  

THIS FORM IS AN IMPORTANT LEGAL DOCUMENT. IN CONSIDERATION OF MY VOLUNTARY  
PARTICIPATION IN THE ABOVE CLASS/ACTIVITY, I CONFIRM THAT I HAVE CAREFULLY READ  
THIS FORM WHICH EXPLAINS THE RISKS I AM ASSUMING BY PARTICIPATING IN THE  
CLASS/ACTIVITY. I UNDERSTAND THAT IF I WISH TO DISCUSS ANY OF THE TERMS  
CONTAINED IN THIS AGREEMENT, I MAY CONTACT DISTRICT RISK MANAGEMENT.

(1) Assumption of Risks: I understand that the above-listed class/activity, by its very nature,  
includes certain inherent risks that cannot be eliminated regardless of the care taken to avoid injuries.  
The specific risks vary, but may involve minor injury, major injury, and serious injury, including  
permanent disability and death, and severe social and economic losses which might result not only  
from my own actions, inactions, or negligence, but the actions, inactions, or negligence of others, the  
rules of play, or the condition of the premises or of any equipment used. I understand and appreciate  
the risks that are inherent in the class/activity. I hereby assert and agree, on behalf of myself, my  
family, heirs, personal representative(s), and/or assigns, that my participation in the class/activity is  
voluntary and that I knowingly assume all such risks. I recognize the importance of following  
instructions regarding proper technique, training and other established safety rules, guidelines and  
regulations, but understand that I am ultimately responsible for my own safety, and I agree to abide  
by all rules and regulations governing the class/activity.

(2) Hold Harmless, Indemnity and Release: In consideration of permission to participate in the  
above listed class/activity, I agree here and forever, to the maximum extent permitted by law, for  
myself, my family, my heirs, personal representative(s), and/or assigns, to defend, hold harmless,  
indemnify and release, the [________ District] (“District”), its Board members, administrators,  
officers, agents, and employees, from and against any and all claims, demands, actions, or causes of  
action of any sort, present or future, on account of damage to personal property, or personal injury, or  
illness, or death which may result from my participation in the class/activity. This release specifically  
includes claims based on the negligence of the District and its Board members, administrators,  
officers, agents, and employees. I understand that by agreeing to this clause I am releasing claims  
and giving up substantial rights, including my right to sue, and am doing so voluntarily. No  
representations, statements, or inducements, oral or written, apart from the foregoing written  
statement, have been made.

I ACKNOWLEDGE THAT I HAVE READ THE FOREGOING PARAGRAPHS, HAVE BEEN FULLY AND  
COMPLETELY ADVISED OF THE POTENTIAL DANGERS INCIDENTAL TO ENGAGING IN THE  
CLASS/ACTIVITY, AND AM FULLY AWARE OF THE LEGAL CONSEQUENCES OF SIGNING THIS  
PERMISSION, ASSUMPTION OF RISK, AND HOLD HARMLESS, INDEMNITY AND RELEASE.

____________________________      ___________________________      _____________  
Parent/Guardian Signature(s)     Participant Signature                     Date
(If participant is under age 18)  

Parent/Guardian Name(s) (Please Print)     Phone Number(s) 

Street Address   City       State     Zip Code

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Exhibit 2—Sample Medical Treatment Authorization Form

MEDICAL TREATMENT AUTHORIZATION

Participant: ____________________________

Description of Class/Activity: ____________________________ Name of School: ____________________________

Date(s) of Class/Activity: ____________________________

I hereby request permission to participate in the aforementioned class/activity understand that the class/activity, by its very nature, includes certain inherent risks and could cause minor injury, major injury, and serious injury, including permanent disability and death. In the event of illness or injury, I do hereby consent to whatever x-ray examination, anesthetic, medical, surgical or dental diagnosis or treatment, emergency transportation, and hospital care considered necessary in the best judgment of the attending physician, surgeon, or dentist and performed under the supervision of a member of the medical staff of the hospital or facility furnishing medical or dental services.

I further acknowledge that the District does not provide liability or medical insurance coverage for participants who participate in this class/activity.

_____ I have no special health needs the staff should be aware of, and no medication is required during this class/activity.

_____ Other: ____________________________________________

Medical Insurance Carrier: ____________________________ Policy Number: ____________________________

(e.g., Blue Cross)

In the event of an emergency, please contact:

___________________ ____________________________ Work: ( ) _____________
(Name) (Relationship) Home: ( ) _____________

One Check and Parent/Guardian Signee’s(‘) or Participant’s (if 18 or older) Initials for Each Line is Required:

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
<th>Initials</th>
<th>Health or Special Need</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Participant has no special health needs the staff should be aware of, and no medication is required.</td>
</tr>
</tbody>
</table>
|     |    |          | Participant has a chronic allergic condition or temporary medical or physical condition, and instructions are attached.  
No. of attached pages: ________.
|     |    |          | Participant has a special need covered by Section 504 and/or an individualized education plan (IEP). |
|     |    |          | Other (please describe): No. of attached pages: ________.

___________________ ____________________________ ____________
Parent/Guardian Signature(s) Participant Signature Date

___________________
Parent/Guardian Name(s) (Please Print)

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Exhibit 3—Sample Theater Permission Form

CLASS/ACTIVITY PERMISSION

Participant: ___________________________________________________________________

Description of Class/Activity: __________________ Name of School: __________________

Date(s) of Class/Activity: _______________________________________________________

☐ Transportation is provided by District ☐ Transportation is participant's/parent's responsibility

By my signature below, I hereby:

☐ Acknowledge my participation in the above-described class/activity.

☐ Give permission for my son/daughter to participate in the above-described activity (if participant is under age 18).

I realize that this activity is voluntary as part of the [________________ DISTRICT] (District) program. I am aware of the transportation arrangements for this activity and acknowledge that if the school is providing no transportation, I/my parent has complete and sole responsibility for all transportation arrangements. I am aware that the District does not provide coverage for medical treatment in connection with this activity. If a participant does not have private medical insurance, low-cost school insurance is available through the District. I further acknowledge that the District does not automatically provide for medical coverage for participants in this activity.

I also understand and acknowledge that, in order to participate in the above-described class/activity, I need to provide separately dated and signed Waiver, Release and Indemnity Agreement and Assumption of Risk for Participation in Voluntary Class/Activity and Medical Treatment Authorization forms to the District in advance of the class/activity.

____________________________     ___________________________      ____________
Parent/Guardian Signature(s)     Participant Signature                        Date
(If participant is under age 18)

_________________________
Parent/Guardian Name(s) (Please Print)  Phone Number(s)
Exhibit 4—Adult Theater Technical Crew and Stage Hand Requirements

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REQUIREMENTS FOR ADULT TECHNICAL CREW AND STAGE HANDS

Certain duties should be met prior to using adult technical crew and stage hands. The following requirements are recommended:

- Applicant should provide written documentation from a licensed physician showing evidence of freedom from tuberculosis and any other contagious disease that would prohibit a certificated employee from being hired.
- Applicant should provide recommendations attesting to his or her good moral character and fitness to associate with student crew, stage hands, and actors.
- Applicant should be fingerprinted in accord with the Department of Justice.
- A criminal background checks should be conducted in accordance with District hiring policy.
- A thorough review of prior employment history should be undertaken.
- References should be checked.
- Checks for prior convictions involving moral turpitude, unfitness to associate with children, and registered sex offenses should be undertaken.
- A standard orientation covering such topics as safety, bloodborne pathogens, sexual harassment, etc. should be administered and documented.