Understanding the Risks of Physical Restraints

Overview

The use of restraint remains contentious particularly due to the specific concerns and risks associated with such practice. As such, this resource is intended to support and promote positive practice and to ensure that physical interventions are used as part of our commitment to *Care, Welfare, Safety, and Security*SM. In accordance with current legislation and guidance, the circumstances that may justify the use of physical interventions include:

- When an individual poses a significant risk to self.
- When an individual poses a significant risk to others.
- When an individual causes damage to property that may result in significant risk of harm to self or others.

Despite any legal and professional justification, physical interventions are not free from risk, and as such professional staff have a duty of care to minimize the psychological and physiological adverse outcomes that are associated with such practice. When using physical interventions to manage the risks associated with an individual's behavior, staff face the dilemma that the specific intervention used may compromise the welfare and safety of those involved, and as such it is important that physical interventions are applied within a context of best practice in order to minimize harm.

Potential Risks Associated With the Use of Physical Interventions

In circumstances where it has been identified that physical interventions are an appropriate response to manage a prevailing risk associated with an individual's behavior, it is important that staff fully understand the adverse impact physical interventions may have. (See Figure 1.) While there is a need to reduce psychosocial impact and soft-tissue and articular/bony injuries, there is a clear priority that every effort should be made to ensure restraint-related deaths are avoided.

Figure 1: Restraint-Related Injury or Harm

Psychosocial Injury

- Including post-traumatic stress disorder and damage to therapeutic relationships.

Soft-Tissue Injury

- Including injury to skin, muscles, ligaments, and tendons.

Articular or Bony Injury

- Including injury to joints and bones.

Respiratory Restriction

- Including compromise to airway, bellows mechanism, and gaseous exchange, which results in respiratory crisis or failure.

Cardiovascular Compromise

- Including compromise to the heart and the peripheral vascular system.

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Theories of Restraint-Related Deaths

There has been a growing body of opinion that highlights that specific interventions are associated with higher risks to the person being restrained. However, while this view remains dominant among practitioners, organizations, and legislators, the evidence shows that although physical restraint has the ability to impede or restrict life-maintaining physiological functions, the imposed impediment is not uniform between different restraint positions. In particular, the term "positional asphyxia" (Reay, et al. 1988), which is misunderstood and inconsistently used and interpreted, is often viewed as the mechanism for sudden restraint-related death and has become synonymous with prone restraint—a conclusion primarily based on opinion.

In 2011, the Independent Advisory Panel on Deaths in Custody commissioned a review of medical theories, case studies, and research and concluded that certain groups are more vulnerable to the risks of restraint as a result of specific bio-physiological, interpersonal, situational, or attitudinal factors. From this review, it is clear that certain individuals have personal characteristics that may make them more vulnerable to restraint-related adverse outcomes and, in particular, restraint-related death. More recently, Barnett, et al. (2012) published a 30-year review of all the scientific studies related to the physiological impact of restraint and raised attention to the fact that few scientific studies on the physiological impact of restraint have been undertaken with the findings from these not completely valid or generalizable to the real-life event. As a result of the recent published reviews, Figure 2 below illustrates an overview of the evidence from the literature, case studies, and experimental research and demonstrates there are a number of complex issues related to adverse outcomes of restraint suggesting that restraint-related death, in particular, is a multi-factorial phenomenon.

Figure 2: Restraint-Related Deaths – A Multi-Factorial Event

Most Vulnerable Individuals	Contributing/Situational Factors
• People with serious mental illness. • People with intellectual disabilities or cognitive impairment. • People from minority ethnic groups. • People with a high body mass index. • Men aged 30–40 years. • Children and young people below the age of 20 years. • People who are held for prolonged periods of time.* * *While some researchers, O'Halloran, et al. (2000) and Miller (2004), provide case-study evidence to suggest collapse can occur between 2 and 12 minutes, others such as Parkes (2000) argue that restraints involving prolonged, severe struggle are of greatest concern.*	1. People who have a pre-existing health condition that is compromised by physical restraint: Respiratory disease, cardiovascular disease, epilepsy, obesity. 2. Stress-related cardiomyopathy: A weakening of the heart muscle triggered by high levels of emotional stress or anxiety resulting in high circulating levels of catecholamines (adrenaline and epinephrine). 3. External respiratory restriction as a result of the restraint position: Positional asphyxia associated with prone, hog-tie, and flexed-seated restraint. 4. Intoxication: An adverse physiological state produced by a poison or other toxic substance (especially cocaine), which results in erratic or violent behavior. 5. Excited delirium: A combination of acute behavioral disturbance, agitation, severe anxiety, disorientation, and elevated body temperature; associated with severe mental illness and/or drug intoxication. 6. Respiratory acidosis: A decrease in respiratory ventilation resulting in a buildup of carbon dioxide leading to increased acidity in the blood and tissues. 7. Thromboembolic disease: A cardiovascular condition involving the obstruction of blood flow to one or more arteries in the lungs. 8. Use of prescribed psychotropic medication: Prescribed medication which may have an adverse effect on the person's physiology resulting in hypotension, respiratory compromise, and, in extreme cases, neuroleptic malignant syndrome.

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Positional Asphyxia and Restraint Position

Although there are a relatively small number of restraint-related deaths reported in health, educational, and social care environments occurring during and/or in close proximity to physical restraint (Independent Advisory Panel on Deaths in Custody, 2011), these are often perceived to have occurred as a result of positional asphyxia. This has led to some organizations advocating the unhelpful and largely unsupported view that prone restraint is the main risk and therefore should be abolished in favor of alternative positions (seated, standing, or supine), which are incorrectly perceived as less harmful.

As part of an overall approach to reduce risk, professional staff who are expected to manage behavior using physical restraint need to ensure that the training they receive provides sufficient information on restraint-related adverse outcomes so they know how such factors can be minimized in order to maintain everyone's *Care, Welfare, Safety, and Security*SM. Figure 3 below highlights a range of best-practice indicators that should shape practice and enable organizations to reduce avoidable restraint, as well as minimize the risks of restraint when such measures are unavoidable.

Figure 3: Best-Practice Indicators

Some Best-Practice Principles for the Use of Physical Interventions

- Physical interventions should be used within an organization as part of a wider restraint-reduction strategy to minimize avoidable restraint.
- As part of a restraint-reduction strategy, physical interventions should be used only when all other nonphysical interventions have failed to manage the prevailing risk. Physical interventions should never be used as a punishment, to force control, gain compliance, or enforce rules.
- People who are likely to be subject to the use of physical interventions should have an individual risk assessment completed in order to identify any specific contraindications associated with the person, including any known vulnerabilities that may increase the likelihood of an adverse consequence. Where possible, specific medical advice should be sought in order to fully assess the impact physical interventions may have on those individuals who are known to be in vulnerable groups.
- All physical interventions should be authorized and approved by the organization and written into an individual management plan. Where physical interventions are used reactively to manage an unforeseen risk, an individual assessment and management plan should be undertaken as soon as is reasonable and practical.
- Only staff who have received training should use physical intervention skills.
- Prolonged physical restraint increases the risk of restraint-related death. Whenever possible, all reasonable and alternative nonphysical interventions should be used if the duration of a physical restraint exceeds 10 minutes (NICE, 2015).
- Staff using physical interventions must be fully aware of the risk associated with each intervention. They must monitor the individual's safety and well-being at all times, be able to identify signs of distress, and know how to respond to medical emergencies. (See Figure 5.)
- In order to maximize the *Care, Welfare, Safety, and Security*SM of everyone, physical interventions should be used within the context of the *Opt-Out Sequence*SM in order to promote early physical de-escalation.
- Staff who use physical interventions should also be trained in emergency first aid so they can respond to medical emergencies should they occur as a result of restraint.
- Physical interventions should be used only for the minimum amount of time, using the minimum amount of restriction on the basis of prevailing risk that staff are attempting to manage.
- In any emergency where an individual is held on the floor, a supine (face up) position should be used. If this cannot be immediately achieved, the CPI *Supported Prone Position*SM may be used as this has been shown to significantly reduce the physiological and psychological impact compared to other prone positions (Barnett et al, 2013; 2016).

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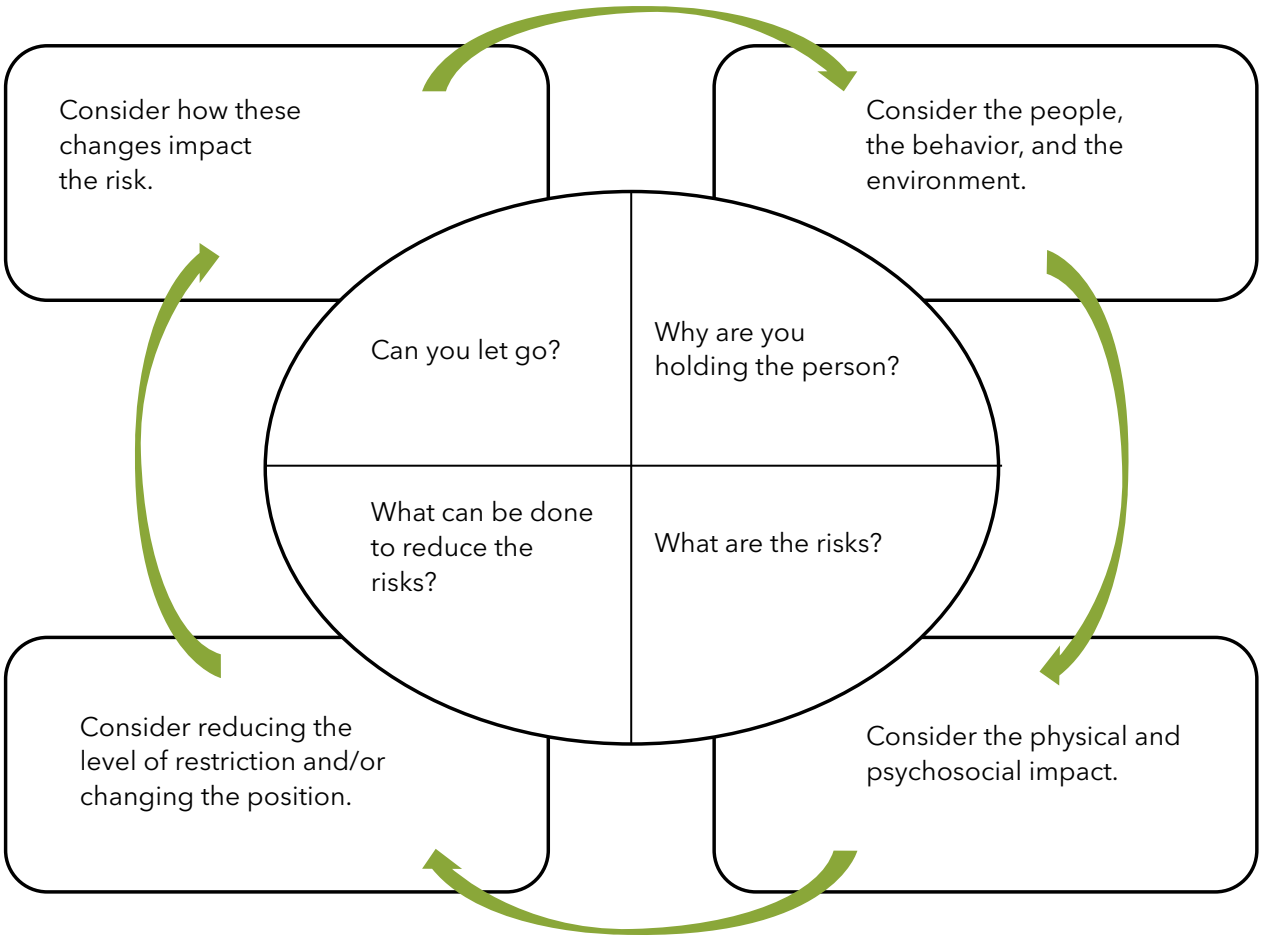
Prolonged Physical Restraint

Prolonged physical restraint increases the risk of harm to the individual and has been associated with restraint-related deaths. As such, all physical interventions must be the least restrictive and only maintained for the least amount of time possible.

The *Opt-Out Sequence*℠ has been developed as an active decision-making framework to enable staff to assess the continued risks in order to minimize the duration of the restraint. In any situation where a physical restraint exceeds 10 minutes, staff must take all reasonable actions to end the restraint and seek an alternative nonphysical intervention (NICE, 2015).

Figure 4: The *Opt-Out Sequence*℠



In order to ensure everyone's *Care, Welfare, Safety, and Security*℠ during restraint, a number of key observations must be maintained, as such events can quickly become medical emergencies. Figure 5 illustrates some of the observations, sounds, signs, and symptoms along a continuum of low concern (section A) to high concern (section C), and identifies the corrective actions staff must take to ensure the individual's welfare is maintained and the risk of serious harm is reduced.

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Figure 5: Risks of Restraints: Warning Signs and Corrective Actions

	Warning Signs	Corrective Actions
A	• Shouts and swears at staff to "let go." • Attempts to struggle free and/or injure self or others. • Is hostile and aggressive to self or others.	Treat as IMPORTANT. Manage the prevailing risk and follow the *Opt-Out Sequence*℠. Consider letting go as soon as possible, or reduce the level of restriction and/or change the position of the person.
B	• Complains of difficulty breathing. • Complains of feeling sick and/or vomits. • Voids bladder and/or bowels. • Complains of pain or discomfort. • Limbs positioned awkwardly; not moving within normal range of motion; and/or sounds of crepitus. • Becomes distressed and/or cries. • Continually struggles; becomes increasingly hot/flushed/sweaty.	Treat as URGENT. Immediately assess level of restriction and check to ensure you are not impeding or restricting breathing. Check movement of limbs and signs of fracture/dislocation. Follow the *Opt-Out Sequence*℠ and consider letting go as soon as possible; reduce the level of restriction; and/or change the position of the person so they are seated upright, reclined (recumbent), or in a position that is not impeding or restricting breathing. Encourage person to relax and to take sips of a cold drink—assess hydration needs. Call for help—an independent person not involved in the physical restraint is often best to assess what is happening and what action needs to be taken. Refer person to medical practitioner as soon as possible for further assessment.
C	• Unresponsive to requests or instructions. • Loss of or reduced consciousness. • Abruptly/unexpectedly stops struggling or suddenly calms down. • Sudden change in breathing pattern. • Has a seizure of epileptic or non-epileptic origin. • Blueness of lips/fingernails/ear lobes (cyanosis). • Tiny pinpoint red dots/bruises (called petechia) on the skin, particularly on the upper chest, neck, face, and around the eyes.	Treat as a **MEDICAL EMERGENCY**. The term **Medical Emergency**[1] should be used as a verbal prompt for staff to stop the restraint immediately and: • Call for emergency medical assistance. • Follow the basic life support (BLS) algorithm as outlined in national and international resuscitation guidelines.

[1]At any time, if any staff member is concerned about the individual's welfare and safety, they should clearly state "medical emergency." The term "medical emergency" is an instruction for everyone involved in the restraint to immediately let go of the individual and begin the necessary emergency aid.