Guidance

Dynamic Air Flow Pressure Relieving Mattresses

Information and Fire Prevention Guidance for Partner Organisations
Contents

Guidance Statement.................................................................................................................3
Scope ................................................................................................................................................3
Guidance ........................................................................................................................................3
  Background ..................................................................................................................................3
  What are Dynamic Air Flow Pressure Relieving Mattresses? ..............................................3
  What is the problem in relation to fire? ..................................................................................3
  Emollient creams .....................................................................................................................4
Guidance for Partner Organisations .........................................................................................4
Working in Partnership ..............................................................................................................7
GMFRS Contact List .....................................................................................................................8
Guidance Statement

This guidance supports the GMFRS Prevention Strategy and the GMFRS Home Safety Strategy. It has been provided by GMFRS for partner organisations to assist in the delivery of fire prevention interventions and advice.

Scope

This guidance is for professionals working with individuals who use Dynamic Air Flow Pressure Relieving Mattresses.

The purpose of the guidance is to assist professionals to identify and reduce fire risk.

It should be noted that the guidance is applicable to individuals using other Dynamic Air Flow Pressure Relieving devices such as cushions.

Other pressure relieving or redistributing mattresses, such as foam, fluid or gel filled mattresses are also used to prevent pressure ulcers.

Professionals should also note that this guidance is relevant for individuals who spend extended periods of time in bed, or are bedbound, due to illness and impaired mobility, regardless of whether they use Dynamic Air Flow Pressure Relieving Devices, other pressure relieving devices, or standard mattresses.

Guidance

Background

What are Dynamic Air Flow Pressure Relieving Mattresses?

Dynamic Air Flow Pressure Relieving Mattresses (and overlays placed on top of standard mattresses) are provided for prevention and treatment of pressure ulcers (bedsores) to people who spend extended periods of time in bed, or are bedbound, due to illness and impaired mobility. The mattresses/overlays are often used in hospitals or in-patient settings but are also provided in the home environment including care homes. The mattresses/overlays are filled with air by a pump. These systems use dynamic, controlled air pressure cells to constantly adjust the mattress/overlay in response to the patient's needs. For the purpose of this document the term mattress will also encompass overlays.

What is the problem in relation to fire?

There have been five fire incidents in Greater Manchester relating to the use of Dynamic Air Flow Pressure Relieving Mattresses in the domestic (home) environment over the last 4 years. Four of these were fatal incidents. GMFRS is aware of two further incidents in other areas, one of which was fatal.

In five of the seven incidents the ignition source was identified as smoking materials, as a result of individuals smoking in bed. The remaining two incidents were caused by a hot hairdryer placed on the bed, and by a television which caught fire resulting in melted plastic falling onto the bed. In all incidents, it is believed that the air released, when the mattress
was punctured by the ignition source, propagated the fire causing it to spread more quickly
and intensely. It should be noted that when one of these mattresses is punctured and loses
air, the pump reacts by working harder to replace the air and so more air is released, fuelling
the fire even further. In addition the mattress pump contains a battery back-up so that if the
electricity supply fails, the pump continues.

Dynamic Air Flow Pressure Relieving Mattresses are provided for the prevention and
treatment of pressure ulcers and are therefore, by nature, provided to people who spend
extended periods of time in bed or are bedbound due to illness and impaired mobility. This
means that if a fire starts or smoke detection activates, the individual using the bed is unlikely
to be able to respond/escape without assistance. When the mattresses are provided in a
home setting, living alone or being alone in the property is therefore a risk factor for
consideration.

When a mattress is provided in the home environment the assessment undertaken may not
routinely include a specific section on fire safety. As a result, the differences in home and
hospital environment may not always be considered when a patient is issued with a mattress
in the home. For example, an individual will not be permitted to smoke in hospital but may
choose to smoke in bed at home. A further difference is that household items which could
start a fire such as candles or some electrical equipment would not usually be present in a
hospital ward or room. Additionally, in the event of a fire occurring in a hospital environment,
members of staff are usually present or are summoned by a fire alarm to deal with the fire
and assist the patient.

Emollient creams

Emollient creams are moisturising treatments applied directly to the skin. They are often
used to treat dry skin conditions such as eczema. They reduce water loss from skin by
covering it with a protective film and use of emollient creams is common amongst people
who spend extended periods of time in bed or are bedbound due to illness and impaired
mobility.

Individuals using paraffin-based emollients should be advised to keep away from fire or
flames as dressings and clothing soaked with the ointment can be easily ignited. Bedding,
including bottom sheets, can become impregnated with emollient creams, therefore
increasing its flammability.

Individuals who smoke should be made aware of the added fire risk associated with smoking
and using emollient creams.

More information can be found on the National Patient Safety Agency (NPSA) Website.

Guidance for Partner Organisations

A Dynamic Air Flow Pressure Relieving mattress will have a pump. The pump will be
connected to the main electricity supply and there is usually a corrugated plastic pipe leading
to the mattress.

In order to mitigate fire risk, partner organisations are advised to follow the recommendations
below when working with people who use Dynamic Air Flow Pressure Relieving Mattresses.
1. **Include Fire Safety within Assessments**

If your organisation is involved in the assessment of individuals or provision of Dynamic Air Flow Pressure Relieving Mattresses, it is recommended that fire safety is considered within assessments and management of risk.

Consideration needs to be given to an individual's environment and behaviours. The differences between a sterile environment such as a hospital and the home environment should be taken into account. Wherever possible, actions should be taken to mitigate any risks that are identified as a result of these differences. The information below in points 2-6 provides guidance to assist professionals to take action.

2. **Provide Fire Retardant Bedding**

GMFRS recommends that fire retardant bedding should be used to reduce fire risk associated with Dynamic Air Flow Pressure Relieving Mattresses. It is recommended that organisations prescribing and providing Dynamic Air Flow Pressure Relieving Mattresses work together to ensure that this is in place. Consideration needs to be given to the amount of bedding provided to account for change of bedding.

3. **Make a referral to GMFRS for a Home Safety Check**

GMFRS delivers Home Safety Checks (HSC) to individuals within the home environment. During a HSC GMFRS staff identify risk specific to a household and provide advice and interventions to reduce risk and improve fire safety awareness. In some cases, including where a person is at increased risk of fire, free smoke detection is fitted.

In all cases professionals working with individuals using Dynamic Air Flow Pressure Relieving Mattresses should seek consent to refer to GMFRS for a HSC. If consent cannot be sought or is not given professionals should deliver the fire safety advice below and contact GMFRS for further guidance.

**To make a referral to GMFRS professionals should telephone the GMFRS Contact Centre on 0800 555 815 and state that the referral is for a person at increased risk of fire.**

For more information regarding HSCs please see the link: [Home Safety Check](#)

GMFRS believe that Home Safety Checks conducted for individuals using Dynamic Air flow Pressure Relieving Mattresses are most effective when completed in conjunction with a relevant health or social care professional or carer\(^1\), or both. To this end it is recommended that professionals making a referral participate in a joint visit with GMFRS staff where possible. This ensures that the fire safety interventions and clinical interventions are integrated and do not compromise each other.

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\(^1\) A carer is anybody who looks after a family member, partner or friend who needs help because of their illness, frailty or disability. All the care they give is unpaid. People using Dynamic Air Flow Pressure Relieving Mattresses may have a carer and may also have one or more health or social care professionals involved in their care. It is important that all of the people involved understand the fire risks.
4. **Fire Safety Advice**

Professionals working with individuals using Dynamic Air Flow Pressure Relieving Mattresses and people involved in their care should discuss the risks as previously described in this document as appropriate to individual situations. The fire safety advice bullet pointed below can be issued. This should be done in a sensitive manner, taking into account that some people may not want to alter behaviours such as smoking in bed.

- Keep ignition sources away from the bed/mattress
- Don’t smoke in bed/on mattress (If an individual is insistent on smoking they should smoke out of the vicinity of the bed/mattress and only when a capable person is with them to assist should they drop a cigarette or should a fire start)
- Don’t burn candles in the room where the bed/mattress is kept
- Don’t use matches or lighters in the vicinity of the bed/mattress
- Don’t have electrical equipment in the vicinity of the bed/mattress e.g. TV over the bed
- Don’t use electric blankets in combination with the bed/mattress
- Don’t overload plug sockets
- Ensure essential electrical items are maintained, and switched off and unplugged at the mains when not in use
- Don’t have fires and heaters in the vicinity of the bed/mattress
- Don’t place hot items, such as hairdryers or heated hairstyling appliances, on the bed/mattress
- If you use a mobility aid, keep it within reach of your bed or device
- If a fire should occur, if it is safe to do so, isolate the power supply by turning off the pump.

5. **Smoke Detection**

Some households will have mains or battery operated smoke detection in place. It is still recommended that a Home Safety Check is carried out in order for GMFRS to assess whether the detection is satisfactory and to provide additional advice and interventions.

During a Home Safety check GMFRS will consider, and in some cases fit, smoke detection.

Many individuals that use Dynamic Air Flow Pressure Relieving Mattresses will have limited mobility and be unable to respond without assistance to smoke detection should it activate. Therefore in many cases GMFRS may recommend to partners that they consider the following dependant on risk:
- Interlinked alarm and detection systems
- Provision of Telecare equipment
- Easy access to a telephone

6. **Automatic Suppression Systems**

Automatic suppression systems (sprinklers) are recognised as an effective method of protecting vulnerable people from fire in their own homes. New technology has developed portable self-contained suppression systems that can be quickly installed into a single room and protect the occupant should a fire occur. These portable units work by detecting heat and smoke, giving the occupant an early audible warning when smoke is detected. Should a fire occur, the heat detector in the system operates a 10 minute water mist to suppress the fire.

Consideration needs to be given to the use of Automatic Suppression System as an appropriate and proportionate response to fire risk for individuals using Dynamic Air Flow Pressure Relieving mattresses. A discussion between professionals involved in the care of the individual, GMFRS and housing organisations should take place to identify the most appropriate system and who should provide this.

The Prevention and Protection department at GMFRS Headquarters can assist in advising on their application.

**Working in Partnership**

GMFRS is committed to working in partnership to achieve shared goals with other organisations. Partners who are interested in developing initiatives to address the risks outlined in this document are encouraged to contact GMFRS.

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2 Telecare and Telehealth services use technology to help people live more independently at home. They include personal alarms and health monitoring devices, which alert a friend, neighbour, family member, nurse or warden when something is wrong.
Greater Manchester Fire and Rescue Service Contact List

To make a referral for a Home Safety check, please contact
GMFRS Contact Centre 0800 555 815, or www.manchesterfire.gov.uk

For information relating to Automatic Suppression Systems and queries regarding smoke detection please contact:

Phil Greenwood, Home Safety Coordinator,
0161 608 4188 GreenwoodP@manchesterfire.gov.uk

For further information relating to Dynamic Air Flow Pressure Relieving Mattresses and fire risk please contact:

Lucy Pollitt, Health and Social Care Coordinator
0161 608 4287 pollittl@manchesterfire.gov.uk
Or
Sarah Hardman, Substance Use Coordinator
0161 608 4294 hardmans@manchesterfire.gov.uk

If you wish to discuss individual cases or the development of a partnership agreement for a local area, please contact the appropriate GMFRS Community Safety Manager from the list below.

**Bolton & Wigan**
Derek Dempster, Community Safety Manager
01204 902112 dempsterd@manchesterfire.gov.uk

**Bury, Oldham & Rochdale**
Martin Barber, Community Safety Manager
0161 909 3512 barberm@manchesterfire.gov.uk

**Manchester**
Tim Burgon, Fire Safety Manager
0161 608 5311 BurgonT@manchesterfire.gov.uk

**Salford & Trafford**
Andrew Pownall, Community Safety Manager
0161 609 0212 pownalla@manchesterfire.gov.uk

**Stockport & Tameside**
Jax Effiong, Community Safety Manager
0161 608 5410 effiongj@manchesterfire.gov.uk