GIG CYMRU NHS WALES
Partneriaeth Cydwasanaethau
Gwasanaethau Ystadau Arbenigol
Shared Services Partnership
Specialist Estates Services

NHS Estate in Wales

Fire Statistics Report

Fire Incidents and Unwanted Fire Signals 2021

NHS ESTATE IN WALES

FIRE STATISTICS REPORT

2021

Report by

NWSSP - Specialist Estates Services
for the
Welsh Government
on

Fire Incidents and Unwanted Fire Signals 2021

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ORIGINATOR: **S Hanger** (Signed)
Fire Safety Advisor

AUTHORISED: **M Travers** (Signed)
Principal Strategic Estates Advisor

CONTENT

1.0 INTRODUCTION

1.1 The effects of fire in any building can be very serious. However, in healthcare premises, fires can have a greater impact due to the presence of large numbers of mobility impaired, vulnerable and dependent patients. Furthermore, it is widely acknowledged that the NHS as a business sector, generates the largest proportion of Unwanted Fire Signals (UwFS) attended by the Fire & Rescue Services (FRS). This can be disruptive to both the patients' well-being and a waste of resources for the NHS and attending FRS. The very high quantity of automatic fire detection throughout the NHS estate, as required by Firecode and British Standards, has a bearing on the number of UwFS.

1.2 This report builds upon the findings and recommendations of the previous report for 2020, published by NHS Wales Shared Services Partnership - Specialist Estates Services (NWSSP - SES) in February 2021. It provides a detailed account of all fire incidents and UwFS reported for the calendar year 1st January 2021 - 31st December 2021, via the online *Fire & UwFS Incident Reporting System.* During this period, a total of 32 fire incidents and 1392 UwFS were reported by NHS Wales.

1.3 It should be noted that this report covers a period of unprecedented circumstances involving the Covid-19 Pandemic. This may or may not have had an effect on the numbers of reported incidents due to a reduction in footfall on healthcare sites, particularly visitors to hospitals.

1.4 This report reinforces the initiatives and recommendations made in previous reports, aimed at supporting NHS Wales in continuing its endeavours to manage and mitigate these adverse incidents.

1.5 For clarification purposes, a false alarm becomes an UwFS when that call is relayed to the FRS. As this report is aimed at reducing the incidence of both fires and fire alarm activations, there will be no differentiation between false alarms and UwFS in this report.

2.0 EXECUTIVE SUMMARY

2.1 There were 32 reported fire incidents during 2021, a 20% reduction over the 40 fire incidents reported in 2020. The number of UwFS also fell from 1492 to 1392, representing a notable 7% decrease on the previous year's data. This downward trend continues to reflect the efforts of the NHS in mitigating the frequency of such incidents.

2.2 Analysis of the fire incidents and UwFS data has indicated some significant trends supporting a number of recommendations, which are highlighted throughout this report.

2.3 Electrical fires were the highest cause of fires in 2021 where 11 incidents accounted for 34% of all reported fire incidents. The remaining fires were attributed to causes such as 'cooking', 'smoking' and 'deliberate', the latter resulting in Fire Enforcement activity.

2.4 The most significant cause of UwFS in 2021 is recorded as 'other environmental effect' (341 incidents) followed by 'cooking fumes' (261 incidents). 'System fault/design' (256 incidents) was identified as the third most significant cause of the actuations. The data indicates that a large proportion of UwFS are directly attributed to some form of human error and there is, therefore, potential to 'manage or design-out' these causes. This is discussed more fully within the main body of the report.

2.5 The data also indicates that, for both fire incidents and UwFS, incidents associated with 'Mental Health Wards', 'Other Staff Areas', 'Staff Residences' and 'General Medical Wards' remain significant in a number of areas.

2.6 Whilst organisations are proactively attempting to mitigate fire incidents and UwFS, they are encouraged to continue following the published standards and guidance contained in BS 5839-1[1], HTM 05-03B[2] and WHTM 05-03H[3].

2.7 The continued downward trend in UwFS corresponds with an overall reduction in attendance by FRS at Health Board incidents. However, the instances of FRS resources being recalled once mobile appears to have declined. Efforts should be made by Health Boards to increase the number of stop calls placed, thereby allowing FRS to utilise their resources more appropriately.

[1] BS 5839-1:2017 Fire detection and alarm systems for buildings Part 1: Code of practice for design, installation, commissioning and maintenance of systems in non-domestic premises.
[2] HTM 05-03B Firecode Health Technical Memorandum 05-03 Operational Provisions Part B Fire detection and alarm systems.
[3] WHTM 05-3H Firecode Welsh Health Technical Memorandum 05-03 Part H Reducing false alarms in healthcare premises.

3.0 BACKGROUND

3.1 The online reporting system currently collects data concerning over 500 NHS buildings including almost 100 hospital sites. The online system shows that there are almost 120,000 actuation devices in the hospital sites alone.

3.2 Although a significant drop in the number of incidents has been identified, in comparison to 2020, the high number of incidents does not necessarily reflect badly on the standards of fire alarm systems in healthcare premises, or on the standards of maintenance and control that exist. All NHS organisations have maintenance contracts in place for the servicing of fire alarm systems and the NHS is one of the major users of automatic fire detection in the UK. Therefore, statistically, the greater the number of detectors in use, the greater will be the number of UwFS.

3.3 However, the frequency of UwFS generated from healthcare premises continues to place an unnecessary strain on resources for both the NHS and the FRS. Furthermore, frequent UwFS can result in a loss of confidence in the fire alarm system, potentially leading to a lowering in the standard of fire safety.

3.4 Accordingly, it is essential that all installations are designed to avoid UwFS, as far as reasonably practicable. **However, avoidance of UwFS should never take precedence over the need for effective detection and early warning in the event of fire.**

3.5 In healthcare buildings, fire alarm systems should be provided in accordance with BS 5839-1, which is supplemented by Firecode HTM 05-03B. These documents both require the installation of an L1 standard of alarm and detection. (An L1 standard of coverage means all rooms are provided with automatic detectors with few exceptions).

3.6 Recognising the problem of UwFS in healthcare, WHTM 05-03H of the Firecode suite of documents, focuses specifically on these issues and provides recommendations and guidance on the reduction of such incidents.

3.7 Within Wales, an online reporting system was introduced in 2003 to support the management of fire alarms as well as facilitate and standardise the reporting procedures for fire incidents and UwFS. The information contained in this report is based on the data reported by NHS organisations via this system.

4.0 FIRE LEGISLATION & FIRECODE

4.1 The Regulatory Reform (Fire Safety) Order 2005 (FSO), is the principal piece of legislation governing fire safety. It applies to virtually all premises in which persons are employed or to which members of the public resort and is based around the principle of fire risk assessment for the protection of 'relevant persons'. The legislation also requires the appointment of a 'Responsible Person' to assume overall responsibility for fire safety within each organisation and ensure compliance with statutory legislation. The legislation is administered by the local FRS.

4.2 Firecode WHTM 05-01 'Managing Healthcare Fire Safety', contains the Welsh Government's fire policy statement and outlines the mandatory requirements for the NHS in Wales, reflecting the requirements of the FSO. It also provides advice on managing fire safety in healthcare premises, and mandates NHS organisations to nominate a Board Level Director (accountable to the Chief Executive) and Fire Safety Manager to take the lead on all fire safety activities.

4.3 The policy aims to minimise the incidence of fire throughout the NHS estate in Wales and to minimise the impact of fire on life safety, delivery of service, the environment and property.

4.4 WHTM 05-01 recommends that the nominated Fire Safety Manager is responsible for ensuring fire incident reporting, monitoring and mitigation of UwFS, and monitoring of inspection and maintenance arrangements of fire safety systems. With regard to fire alarm systems, these responsibilities are outlined in BS 5839-1: Section 7. This recommends that a single named member of the premises management, should be appointed to supervise all matters pertaining to the fire alarm system who should ensure that appropriate action is taken to limit the rate of UwFS. (Refer to BS 5839-1 Section 7 'User responsibilities' for full text).

4.5 The current edition of BS 5839-1 is dated 2017, whereas the supplementary healthcare guidance detailed in HTM 05-03B is dated 2006. This HTM is scheduled for review commencing in 2022.

4.6 It is accepted that, where installations incorporate a large number of automatic detectors, complete elimination of UwFS is impossible. This is recognised in BS 5839-1 and Firecode WHTM 05-03H, which provides performance indicators for acceptable rates of false alarms based on the number of devices in relation to the number of UwFS generated.

4.7 It follows that where circumstances meet the criteria laid down in BS 5839-1 Clause 32.2, in-depth investigations should be initiated, in order to achieve an acceptable rate of false alarms. Firecode also promotes regular stakeholder meetings at poor performing sites.

4.8 Appendix B of this report contains the performance grading chart. The performance grade is automatically calculated as part of the online reporting

system, based on the ratio of incidents to number of actuation devices installed. NHS organisations should ensure that the number of actuation devices recorded in the performance indicators, accurately reflects those installed within their premises. Appendix C contains details of the performance scores and target reduction for individual sites within the NHS organisations' respective areas.

4.9 Stakeholders, such as the National Fire Chiefs Council (NFCC) (formerly the Chief Fire Officers Association (CFOA)) and the British Fire Protection Systems Association (BFPSA), have taken a proactive approach to address UwFS, with the publication of such documents as *CFOA Guidance for the Reduction of False Alarms & Unwanted Fire Signals.*

4.10 In addition, over recent years the NFCC nationally, have produced a number of protocols aimed at reducing UwFS. Whilst these protocols have focussed attention on reducing UwFS, they have also contributed to an inconsistent approach from the FRS in responding to alarm signals. For example, across the UK some FRS's will not respond to automatic fire alarm actuations unless there is also a 999 call confirming a fire.

4.11 Previous reports have discussed the collaborative attempts of the three FRS's in Wales in working to achieve a consistent approach to the response to fire alarm incidents. Unfortunately, the previously developed protocol, titled *'Welsh Fire and Rescue Services Automatic Fire Alarm Protocol'* aimed at ensuring that calls to in-patient facilities would attract an emergency response under 'blue light' conditions is no longer applicable. Therefore, the mobilisation of appliances dispatched may vary according to the individual FRS, noting the location and type of premises, as well as the time the incident occurs, could also influence the FRS response.

4.12 Accordingly, regardless of whether the FRS are initially notified by a local 999 call, central telephonist or Alarm Receiving Centre (ARC), NHS organisations should liaise with their respective FRS to clarify the mobilisation arrangements and ensure that their own procedures reflect the anticipated FRS response.

4.13 To support the FRS, it is imperative that NHS organisations have efficient systems of communication in place to update the FRS on the status of an incident as soon as possible. For example, as soon as it is established that the incident is an UwFS, this should be transmitted to the FRS immediately in order that they can alter the response status of appliances attending the incident. Equally, when it is known or confirmed that a fire actually exists, this information should be relayed to the FRS without delay in order that they may increase their attendance as appropriate.

4.14 From an analysis of FRS data received, there is an overall decrease in 'attendance', this being 4% on the previous reporting year. Recall of FRS whilst mobile to an incident also appeared to show a decrease; however this should be heading in the opposite direction, with more emphasis on Health Boards relaying stop calls to the FRS to avoid unnecessary attendance.

4.15 It should be remembered that these figures were gathered during the Covid-19 Pandemic, which may or may not have had an effect on UwFS. Future reports will endeavour to quantify this aspect.

5.0 REVIEW OF DATA

5.1 FIRE INCIDENTS

During the three-year period from 1st January 2019 to 31st December 2021, a total of 127 fire incidents were reported, 32 of which occurred in 2021.

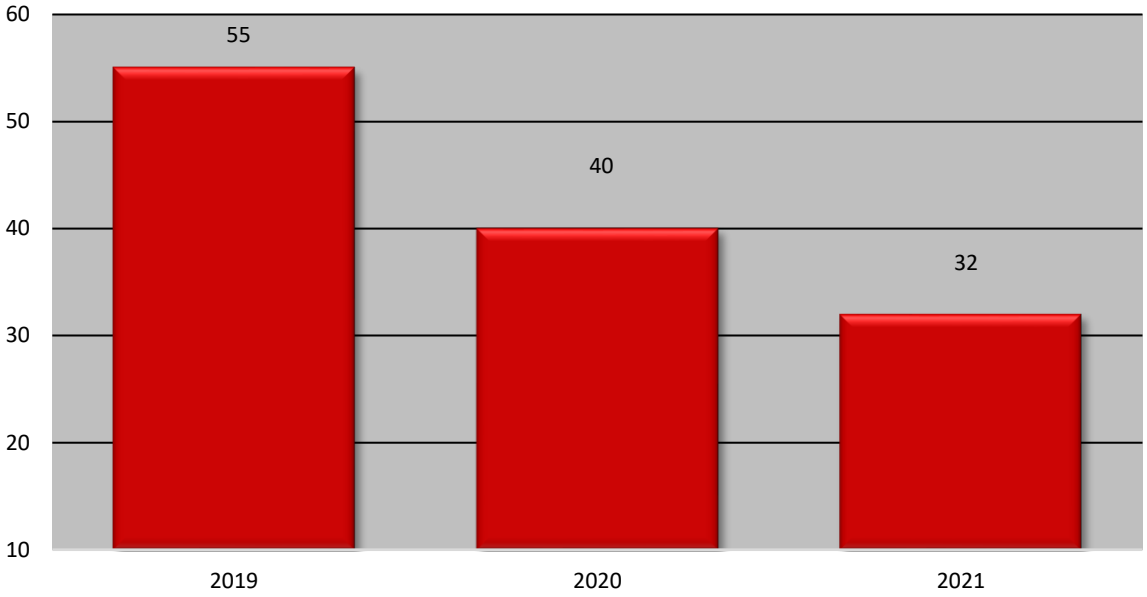


Figure 1 Fire incidents by year illustrating a continued decline during 2021.

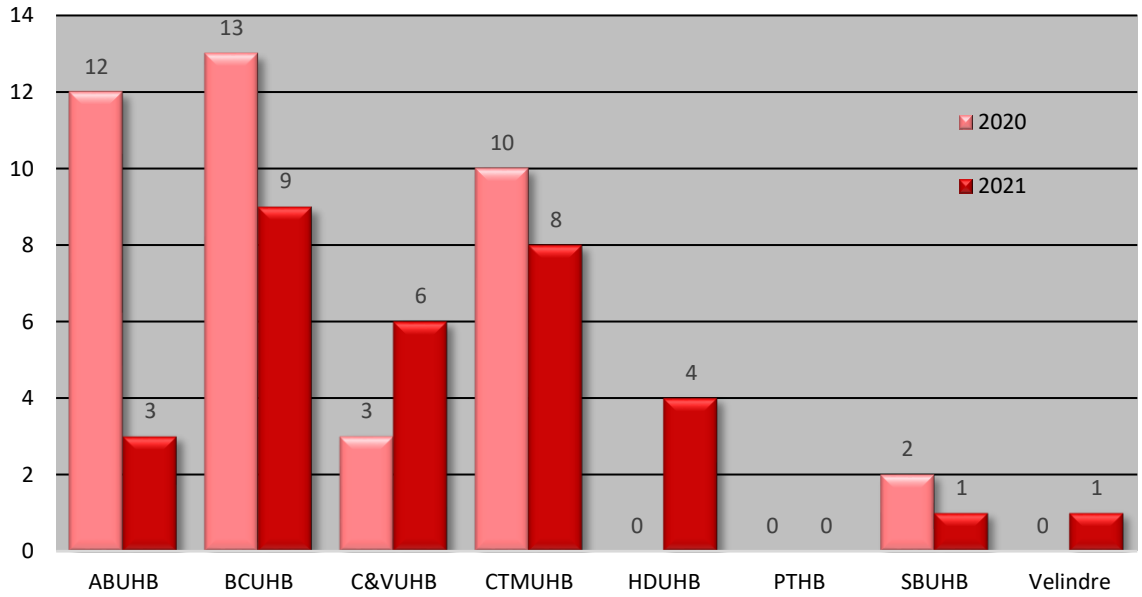


Figure 2 Fire incidents by Health Board 2020 - 2021

Once again, the majority of these fire incidents were dealt with promptly and efficiently by staff prior to the arrival of the FRS. However, costs associated with several fire incidents ranged from £10,000 to over £50,000, in addition to incidences of patients and staff sustaining minor injuries and smoke inhalation.

This section looks firstly at the causes of fire incidents, followed by the materials first ignited, how the fires were discovered and finally, the method of extinguishment.

5.1.1 Cause of fire incidents

The following section looks at the main causes of fire incidents which are illustrated in Figures 3 and 4 below.

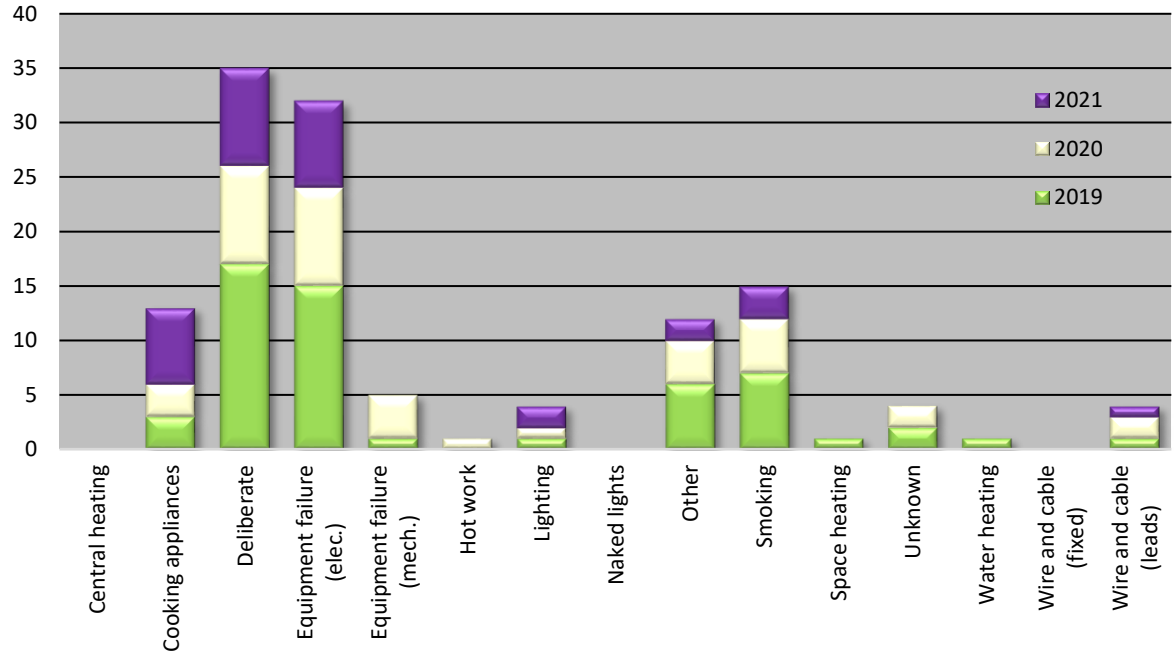


Figure 3 Fires by cause 2019 - 2021

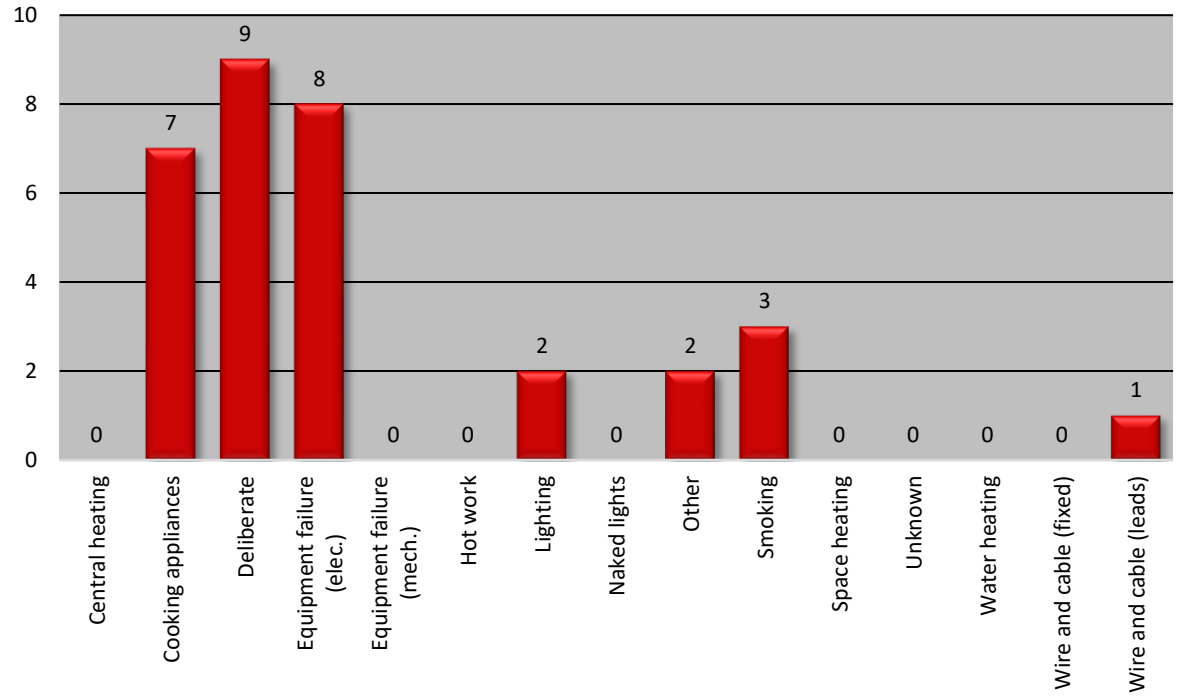


Figure 4 Fires by cause 2021

Figure 4 above shows the cause of fire incidents reported during 2021. These are analysed in depth in the following paragraphs. Appendix A contains a summary of incident causes by organisation.

5.1.2 Electrical equipment failure (including lighting and wiring) (11 incidents: 34%)

During 2021, fires involving electrical equipment decreased by 1 incident compared with the previous year. 'Electrical equipment failure' as a cause of fire accounted for 34% of all reported fire incidents and remains one of the most frequent cause of fires in the NHS in Wales.

This category includes 'equipment failure (elec)', 'lighting' and 'wires & cable (leads)'. The continued pressure on maintenance budgets across the NHS in Wales presents a challenging environment for estates teams to maintain their planned maintenance schedules, including those of the electrical infrastructure, and Portable Appliance Testing (PAT).

NHS organisations should ensure that they comply with all statutory requirements for electrical inspection and testing.

Figure 5 Example of an electrical related fire involving a lighting unit

Of the 11 'electrical-related' fire incidents, the majority remained confined to the individual item of equipment.

The risks associated with personal rechargeable equipment such as mobile phones, tablets and e-cigarettes continue to be evident.

Figure 6 Example of an electrical fire involving a mobile phone battery

These risks and mitigating measures are addressed in WG EFA 2018/007[4] 'Fire risk from personal rechargeable electronic devices'. Of equal importance, WG EFA 2017/003[5] also addresses the replacement and safe disposal of batteries that could present a fire risk if not followed.

[4] Welsh Government Estates & Facilities Alert 2018/007 *Fire risk from personal rechargeable electronic devices* was issued on 5th December 2018.
[5] Welsh Government Estates & Facilities Alert 2017/003 *Guidance for correct use and disposal of batteries used in health and social care equipment* was issued on 6th September 2017.

Summary of main points

- Fires involving electrical equipment remain one of the most common cause of fires across the NHS in Wales.
- The recurring number of electrical fire incidents highlights the importance of on-going maintenance and testing of both fixed installations and portable appliances.
- Fire risks associated with the use of mobile technologies and rechargeable lithium-ion batteries are addressed in WG EFA 2018/007 and WG EFA 2017/003.

5.1.3 **Deliberate** (9 incidents: 28%)

In 2021, deliberate fire-raising accounted for 9 incidents (28% of all fires), similar to the previous year.

Over half of these fires were started by patients within the Mental Health sector; the ignition of waste and clothing typically being identified as the source of materials ignited first. The remaining fires were all as a result of malicious activity and deliberate fire-setting either internally, or externally within the hospital grounds.

Figure 7 Example of deliberate ignition of curtains in a Mental Health Ward

Deliberate fire-raising within the Mental Health sector continues to be a serious concern. It is abundantly clear that greater focus is required in the management and control of ignition sources being brought onto Mental Health Facilities. These failings have been the subject of numerous FRS Fire Enforcement Notices further highlighting the necessity to address the inadequate management arrangements to control the risk of deliberate ignition.

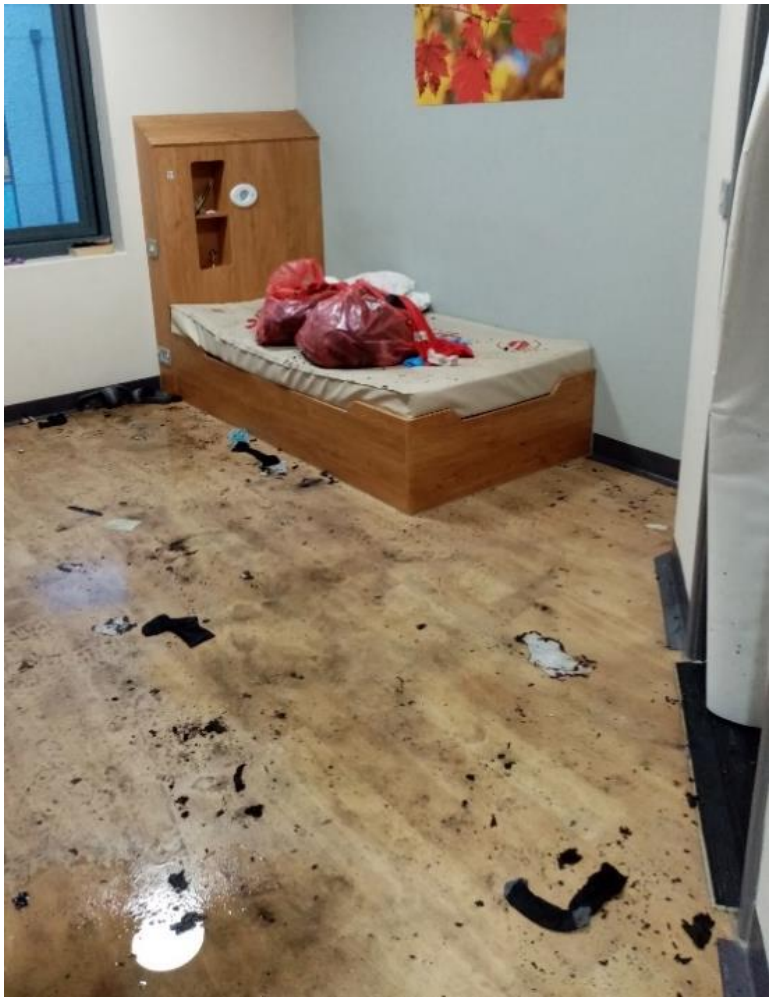


Figure 8 Example of a malicious fire incident in the Mental Health sector resulting in 2 clinical staff and 2 patients being admitted to A&E due to smoke inhalation, evacuation of 17 patients and FRS intervention to extinguish the fire.

Accordingly, in conjunction with the local fire risk assessment which should identify any problematic areas, NHS organisations should continually review the potential for deliberate fire-raising particularly in the Mental Health sector.

Guidance on the prevention, management and detection of arson is contained in Firecode WHTM 05-03 Part F *Arson prevention in NHS Premises*, which also advises that arson prevention should form an integral part of all staff fire training.

Furthermore, although there have been no reported instances of deliberate fire-raising within derelict/disused buildings on NHS premises, this still remains

a concern due to the number of these potentially vulnerable buildings across the healthcare estate. SESN 19/06[6] provides comprehensive guidance and recommendations for the management of unoccupied buildings, including the need for fire risk assessments.

Summary of main points

- Deliberate fire-raising has remained the same as the previous reporting year.
- Over half of the incidents involved the Mental Health sector where typically waste and clothing were the first materials ignited.
- NHS organisations should continually review the potential for deliberate fire-raising, particularly within the Mental Health sector where greater control of ignition sources is necessary to mitigate the risk.
- Reference should be made to WHTM 05-03 Part F and SESN 19/06 which provide comprehensive guidance on Arson control.

5.1.4 **Cooking** (7 incidents: 22%)

Cooking related activities account for 7 incidents (22% of all fires) during 2021; an increase on the 3 reported fires for 2020. The majority of these incidents were as a result of food being left unattended in microwaves, domestic ovens and grills, several of which occurred within staff residences.

Summary of main points

- Cooking activities should be supervised at all times.
- A review on the safe use of cooking products, particularly within staff residences, should be implemented.

5.1.5 **Smoking** (3 incidents: 9%)

In 2021, fires due to smoking totalled 3 incidents, a decrease from the 5 incidents reported in 2020. 2 of these incidents occurred in external waste bins from discarded cigarette ends; the remaining incident as a result of a disorientated patient attempting to light a cigarette whilst attached to a nasal cannula.

All NHS organisations operate smoke free policies on sites across their estate, albeit there is little evidence to suggest these policies are being effectively managed. New legislation was introduced from 1st March 2021, whereby hospital grounds are required to be smoke free. However, illicit smoking remains a common sight at entrances or secluded areas.

[6] Specialist Estates Services Notification (SESN) 19/06 Fire management of derelict or unoccupied buildings

Figure 9 Example of evidence of illicit smoking

Summary of main points

- There is clear continuing evidence on many hospital sites of uncontrolled and illicit smoking activities close to main entrances and within secluded areas.

- The majority of smoking related incidents are caused by carelessly discarded smoking materials.

5.1.6 Material first ignited

The following chart indicates the generic categories of the materials first ignited, which broadly aligns with the associated causes of fire. The 9 cases in the 'other' category relate to more specific descriptions of materials such as cooking oil or electrical components which could equally have been recorded in the generic categories.

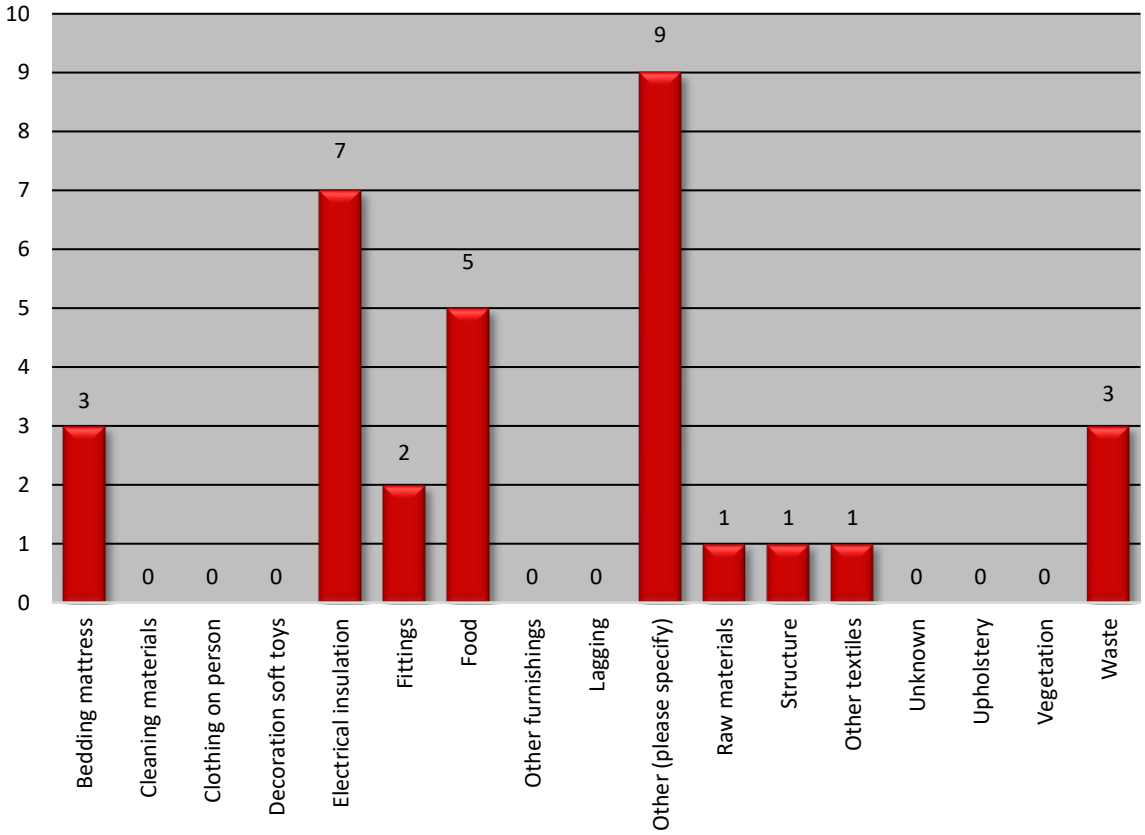


Figure 10 Material first ignited

5.1.7 Discovery of fires

As illustrated in Figure 11 below, 22 (69%) of the 32 reported incidents in 2021 were discovered by people, noting the 2 incidents categorised as ‘other’ were actually discovered by a neighbour to a hospital site and a patient's partner whilst visiting. The fire alarm was raised by automatic means for the remaining 10 incidents, accounting for 31%.

This highlights that initial awareness of persons present within the building, can be more effective than automatic means in the very early stage of a fire incident. This further emphasises the importance of regular and relevant fire training which in turn, may lead to earlier intervention and a reduction in fire spread.

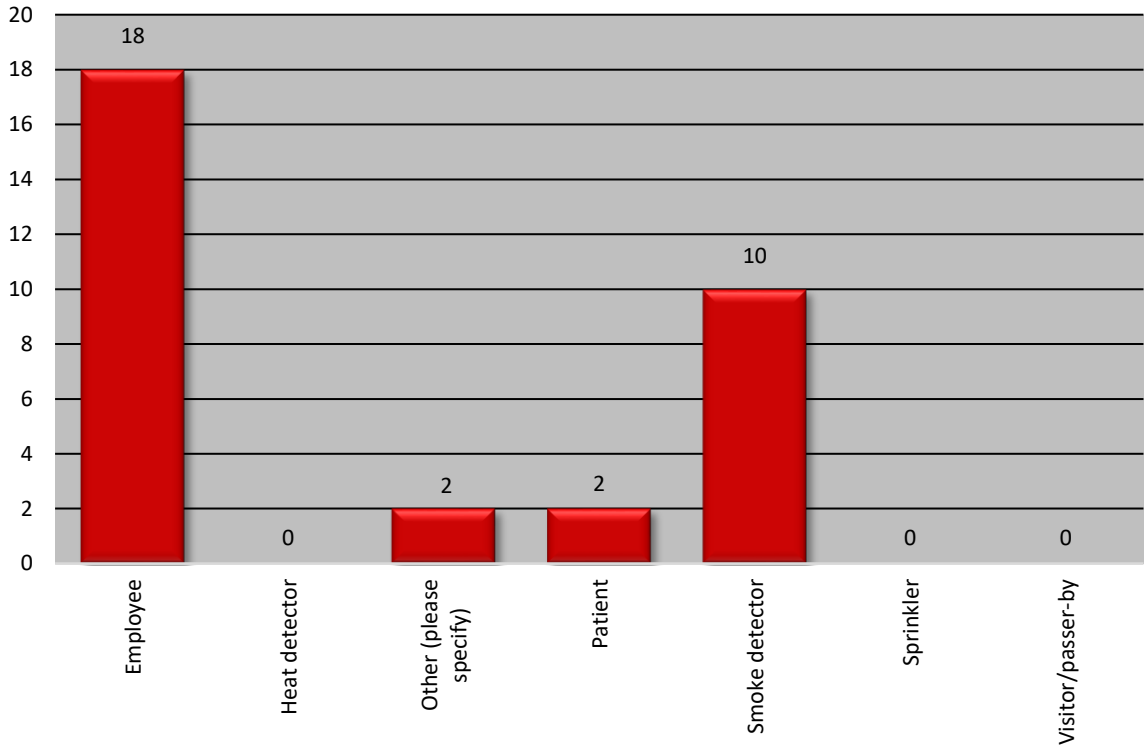


Figure 11 Discovery of fires

5.1.8 Methods of extinguishment

Figure 12 below indicates that 6 fires (19%) were extinguished by portable extinguishers. Five fires (19%) were extinguished by other means through techniques such as smothering and stamping out. A further 13 fires (41%) were extinguished by removal, isolation and self-extinguishment, with staff intervention accounting for 3 incidents (9%) by means of dousing with water. The remaining 4 fires (12%) were dealt with via intervention from the Fire & Rescue Services, utilising portable extinguishers and active firefighting involving FRS resources.

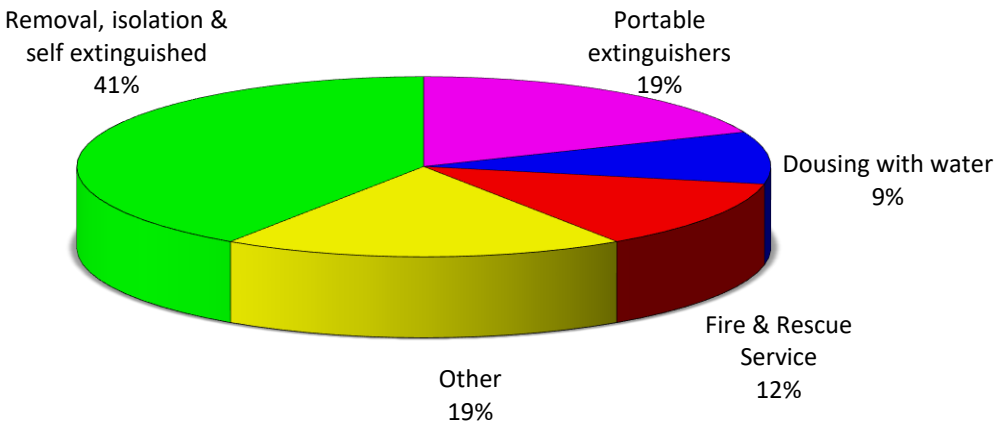


Figure 12 Methods of extinguishment

Summary of main points

- Generally, the materials first ignited correlate with the cause of the fire ie food/cooking, electrical insulation/electrical failure.
- The majority of fires were discovered by people before the automatic fire detection activated.
- The majority of fires were extinguished locally without the intervention of the FRS.
- Early intervention, where it is safe to do so, and where the correct procedures have been followed, ensures that fire incidents remain small and less damaging.

5.2 UNWANTED FIRE SIGNALS

Between the 1st January 2021 and 31st December 2021, 1392 UwFS were reported, utilising the online Fire & UwFS Incident Reporting System. As can be seen from Figure 13 below, this demonstrates a continued decrease of 100 (7%) incidents in the number of UwFS reported by NHS organisations in Wales during 2021.

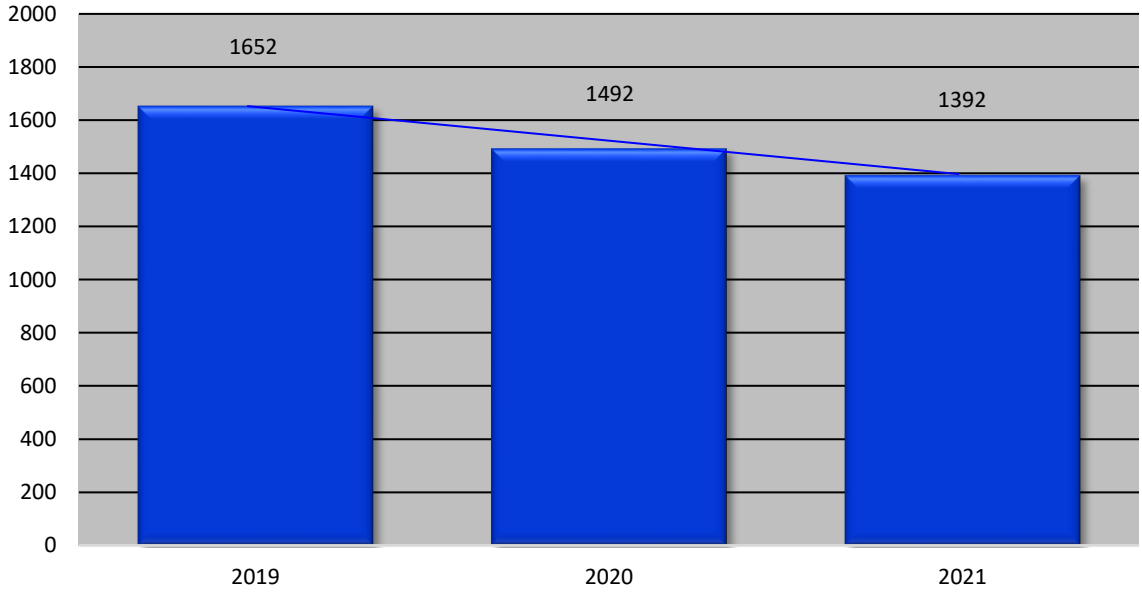


Figure 13 UwFS by year

Recorded evidence highlights an element of under-reporting still exists. Of particular note are the number of recorded attendances by Mid and West Wales FRS to Powys Teaching Health Board hospital sites, this being 53, almost five times more than the 11 incidents recorded by the Health Board. This creates a distorted view of the actual situation in respect of the number of UwFS experienced across the NHS in Wales.

NHS organisations are once again reminded that the reporting of Fire Incidents and UwFS is mandated by the Welsh Government and supports enhanced performance management.

Figure 14 illustrates that with the exception of 2 health boards, some progress has been made in reducing the overall numbers of UwFS during the reporting year.

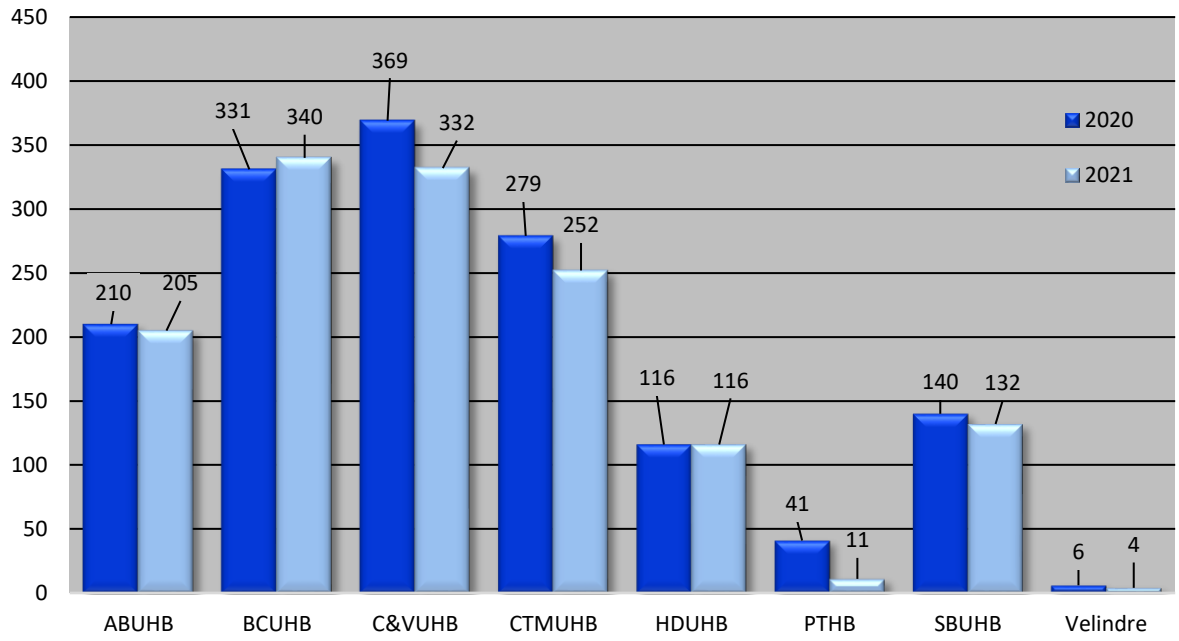


Figure 14 UwFS comparison 2020 - 2021

5.2.1 Causes of UwFS

The Categories of False Alarms defined in WHTM 05-03H (see Appendix E of this report and illustrated in Figure 15 below) are quite rudimentary which restricts the ability to accurately define the cause of the fire alarm activation. Accordingly, during the 2019 reporting year, it became a mandatory requirement for Health Boards to record a Specific Cause for each recorded UwFS (as detailed at Appendix F of this report).

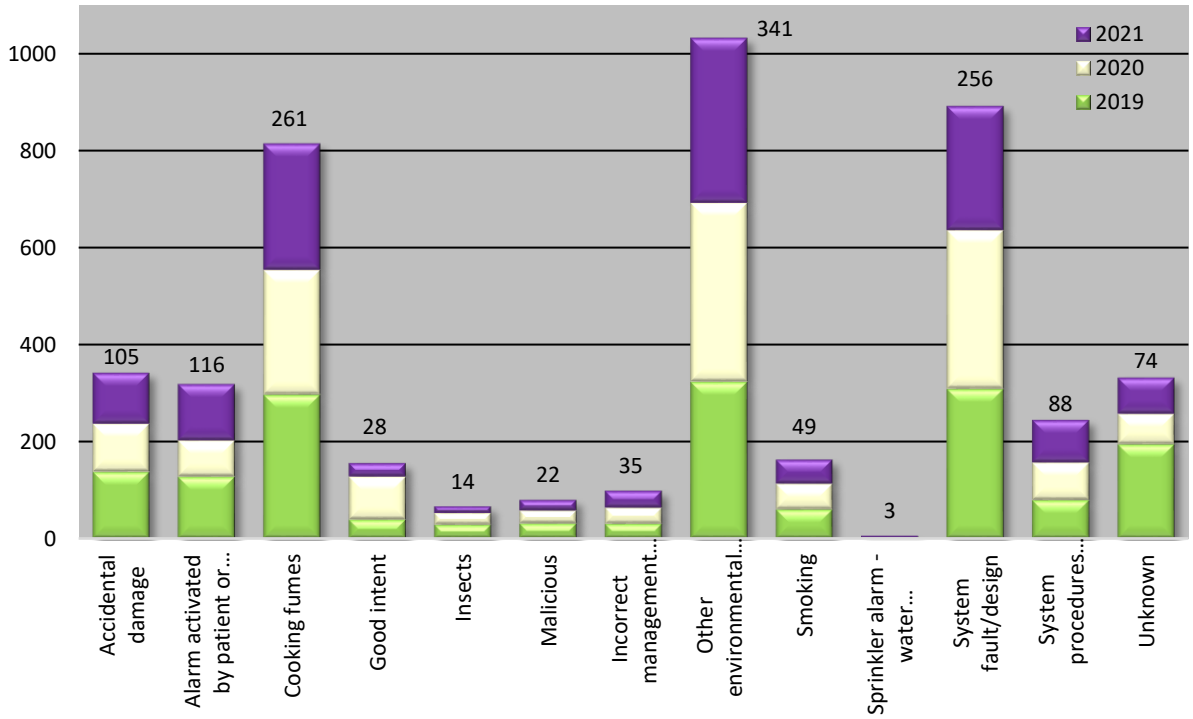


Figure 15 UwFS by cause 2019 - 2021

The following section analyses the 'specific cause' of UwFS data reported

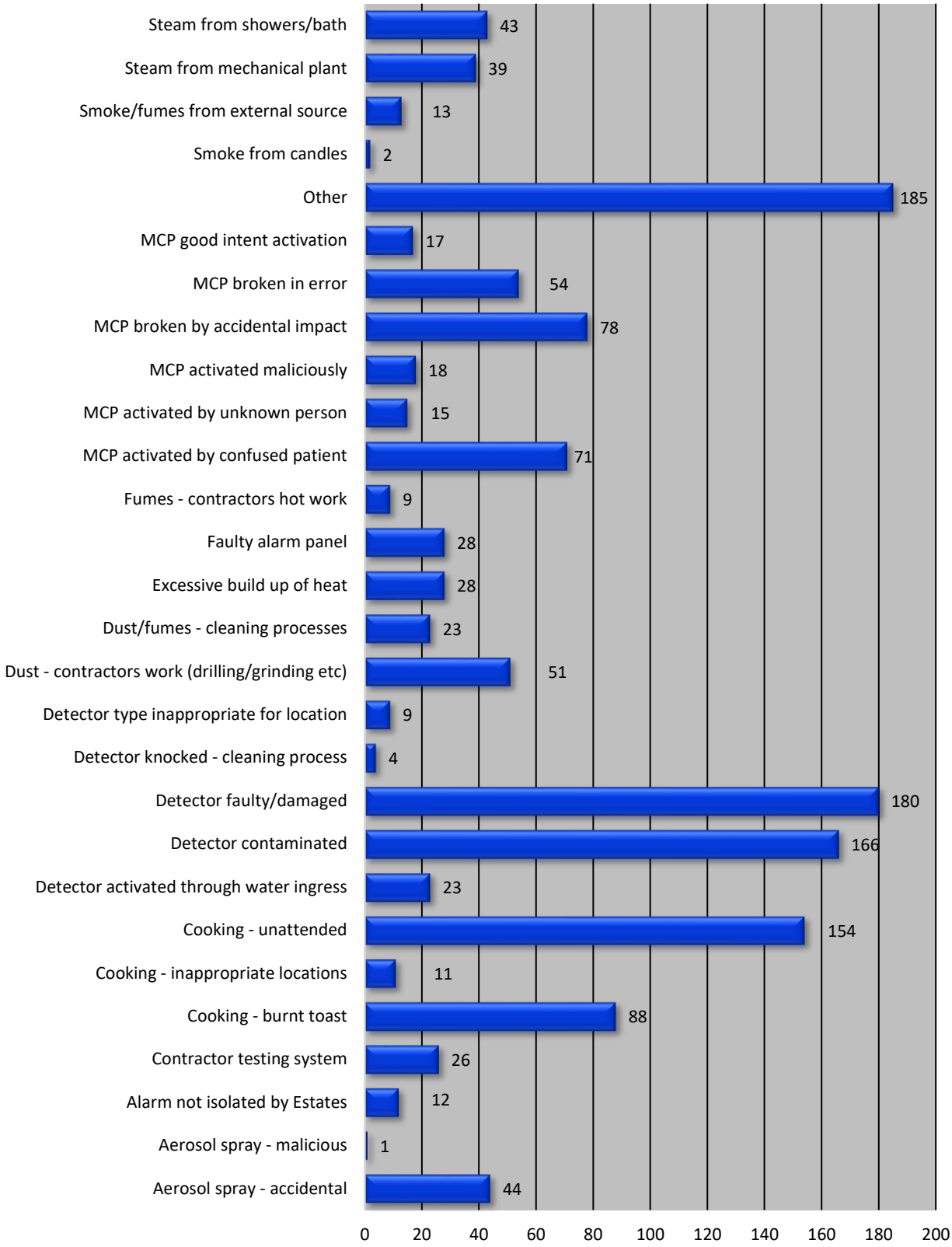


Figure 16 UwFS by Specific cause 2021 (1392 incidents)

5.2.2 Environmental Effects

'Environmental effects' include incidents where notable 'specific causes' were:

- Aerosol spray - accidental/malicious
- Excessive build-up of heat
- Smoke from candles
- Smoke/fumes from external source
- Steam from mechanical plant
- Steam from showers/bath

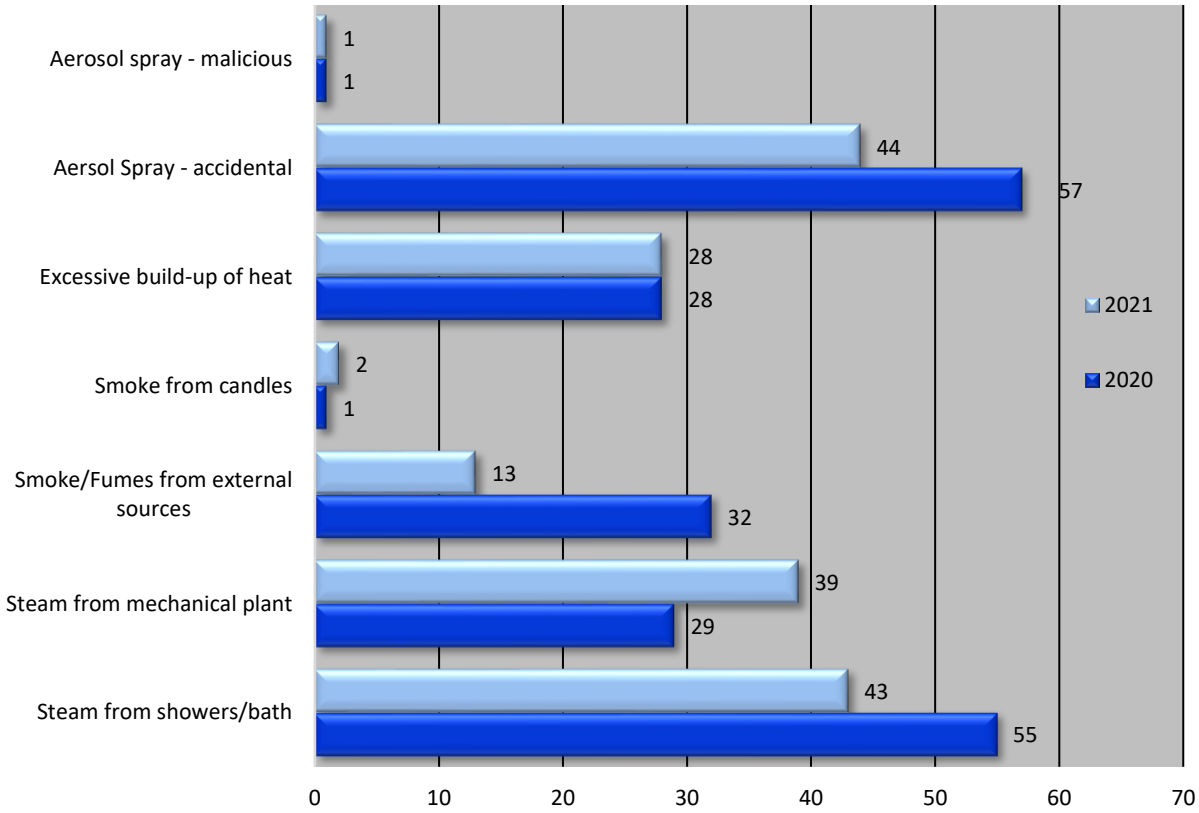


Figure 17 UwFS as a result of Environmental Effects

Cumulatively, there were 170 recorded incidents attributed to environmental effects. 'Aerosol spray' and 'steam from showers/bath' were the highest recorded specific causes, with a mix of both patient and staff responsible for activations, some of which suggest deliberate excessive use of deodorant spray and development of steam.

Again, there were incidents that could have been better recorded in more relevant categories such as 'steam from mechanical plant' and 'cooking - unattended'.

Summary of main points

- The highest specific cause in this category was ‘Aerosol spray - accidental’ (44 incidents), with a mix of staff and patients using deodorant in close proximity to detector heads.
- ‘Steam from showers/bath’ was the second highest specific cause (43 incidents), with patients in private rooms and staff in residences, allowing excessive steam to develop and interfere with nearby detection systems.
- Other incidents could have been better recorded in more relevant categories such as ‘steam from mechanical plant’ or ‘Cooking - unattended’.

5.2.3 Contractor Related Activity

'Contractor related activity’ includes the following ‘specific causes’:

- Alarm not isolated by estates
- Contractor testing system
- Detector knocked - cleaning process
- Dust - contractors work (drilling/grinding etc)
- Dust/fumes - cleaning process
- Fumes - contractors hot works

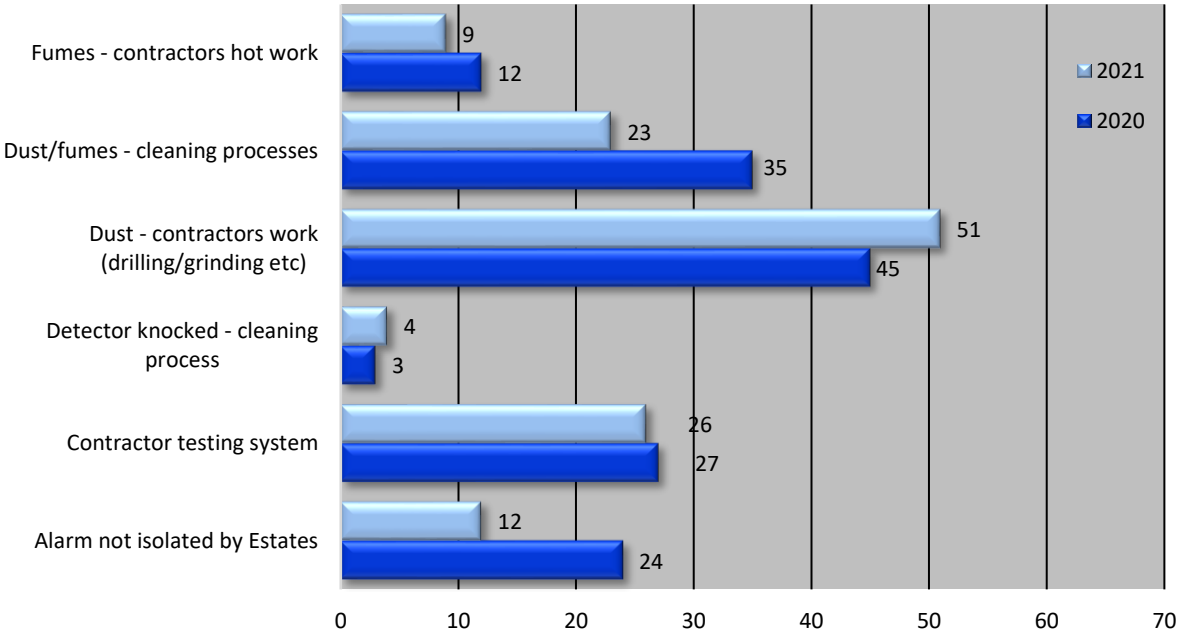


Figure 18 UwFS as a result of contractor related activity

There were 125 incidents involving 'contractor related activity', in comparison to 141 reported in 2020. It should be noted that where cleaning processes have been included, a number of sites utilise the services of contractors for this type of task.

The incidents recorded under these categories, emphasise the importance of utilising robust Control of Contractor policies and Permits to Work, including procedures for isolation of detectors etc.

Summary of main points

- There has been a slight drop in the number of contractor related incidents, from the previous reporting year.
- Control of Contractor policies and Permits to Work need to be reinforced to mitigate these adverse incidents.

5.2.4 Cooking Related Activity

'Cooking related activity' includes incidents where notable 'specific causes' were:

- Cooking - unattended
- Cooking - inappropriate locations
- Cooking - burnt toast

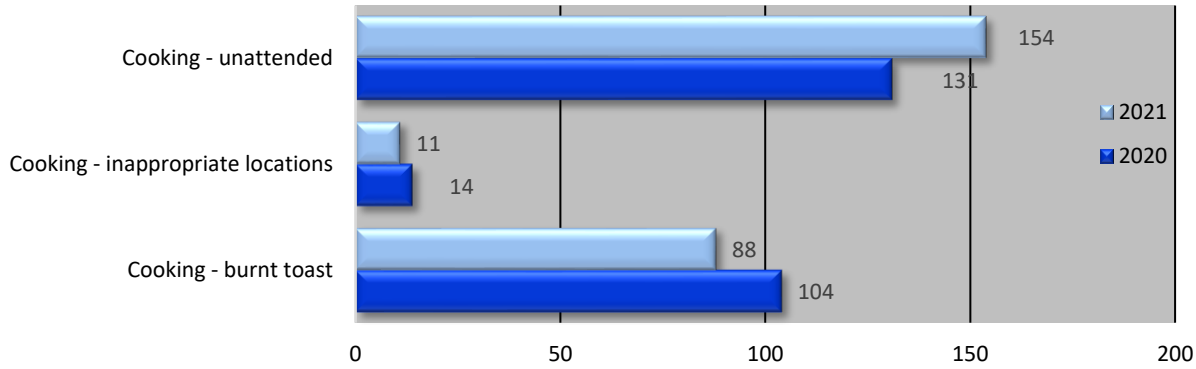


Figure 19 UwFS as a result of cooking related activity

Cooking related activities accounted for 253 UwFS. Of significant concern, is the number of reported incidents where cooking activity has been left unattended, this being 154, 116 of which occurred in one health board (BCUHB); 128 of these (83%) occurred in staff residences, the majority of which are recorded in either local kitchens or corridor/circulation areas, the latter resulting from kitchen doors being left open.

This number of reported incidents within BCUHB is disproportionate in relation to the other health boards, and requires further investigation and control measures.

Summary of main points

- There is a slight increase on the previous reporting year, in the number of incidents attributable to cooking related activities.

- The disproportionate number of incidents reported in relation to ‘cooking - unattended’ particularly within BCUHB, requires further investigation and control measures.

- The highest number of incidents can again be credited to staff residences. This highlights a necessity for improvements to management and a raising of awareness to the dangers of unattended cooking.

- A high proportion of incidents in staff residences occurred as a result of kitchen doors being left open.

- Cooking and associated activities should only take place in approved locations, installed with the appropriate detection and/or carried out away from installed detection systems, such as food trolleys in ward areas.

5.2.5 System Related Issues

'System related issues’ includes incidents where notable ‘specific causes’ were:

- Detector activated through water ingress
- Detector contaminated
- Detector faulty/damaged
- Detector type inappropriate for location
- Faulty alarm panel

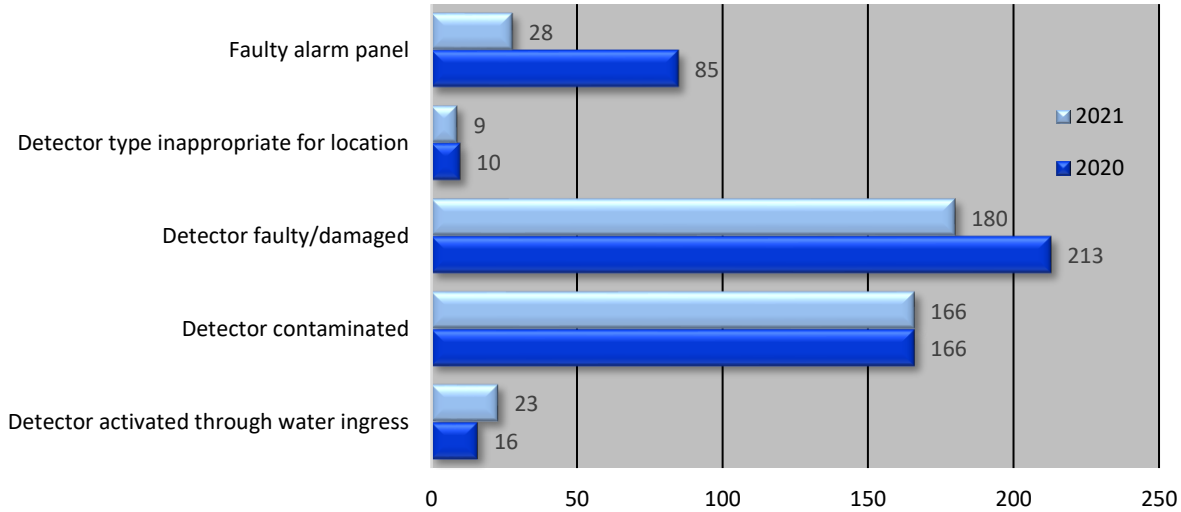


Figure 20 UwFS as a result of system related issues

There has been a notable decrease of almost 20% in the number of system related incidents. There is no real trend relating to departmental areas, however ‘other staff area’, ‘general medical ward’ and ‘out patients departments’ are the areas with the highest numbers of incidents.

Of the 406 recorded incidents, 180 were due to ‘detector faulty/damaged’ and 166 were due to ‘detector contaminated’, accounting for 85% of all activations. Robust maintenance and testing undertaken in accordance with BS5839-1, should assist in mitigating system faults. Equally, system design issues should be identified through periodic testing, whereby non-conformities should be prioritised for action accordingly.

Ageing fire alarm systems across the NHS estate are becoming an all-too-common sight and may be a contributory factor to the ‘system fault/design’ category. As detection devices age they become less effective, more prone to faults and obsolete, therefore difficult to replace. Accordingly, NHS organisations should introduce life cycle replacement programmes, particularly for older systems, to ensure that fire alarm systems perform to the highest standards possible and return less UwFS.

Summary of main points

- Although there has been a significant decrease in system related incidents, the necessity for robust maintenance and testing regimes needs reinforcing.
- NHS organisations should establish whether the age and condition of fire alarm systems are factors in the number of system faults and introduce life cycle replacement programmes where necessary.

5.2.6 Manual Call Point (MCP) activations

This section examines incidents attributed to alarm activations via the use of MCP’s, which have increased in number from 220 to 253 in this reporting year.

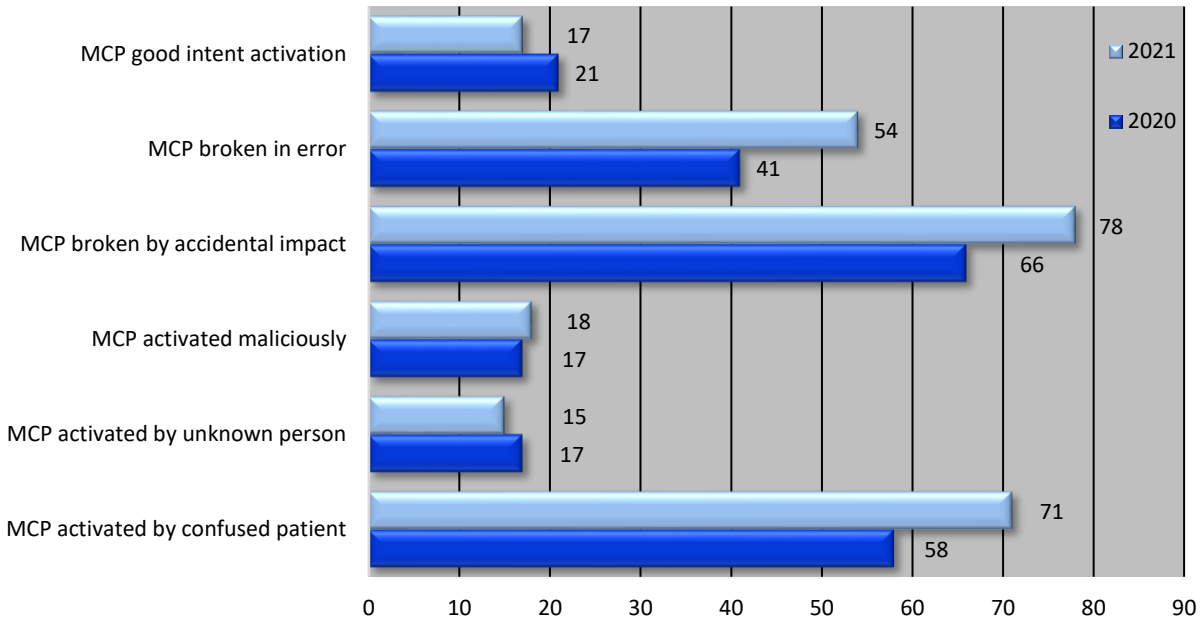


Figure 21 Specific cause attributed to activation of MCP’s

Installation of protective lift covers (some with screechers) to MCP's and key operated MCP's, are becoming more common in accordance with the latest edition of BS 5839-1. Despite this, there are still a significant number of activations of MCP's.

Health boards should ensure all future installations and upgrades include protective covers to MCP's. Furthermore, consideration should be given to expediting the retrofitting of covers to MCP's that are prone to abuse.

Where it is thought the use of lift covers may not be a practical deterrent in the Mental Health sector, or it is perceived that the Perspex covers could be fashioned into weapons, the use of key operated MCP's may be considered.

Sympathetic siting of MCP's at installation stage, in order to avoid risk from accidental impact, would assist in reducing these types of incidents, of which 78 incidents have been recorded. It is also worth noting that persons have mistaken an MCP for a door opening device or a nurse call system.

Despite positive action being taken by some NHS organisations to reduce the number of actuations in this category, it is clear that there remains considerable scope for further reductions.

Summary of main points

- In line with the BS5839:1, NHS organisations should ensure future fire alarm upgrades include protective covers to MCP's. Where necessary, consideration should be given to the installation of covers with screechers or key operated MCP's.

- Particular attention should be paid to the number of 'accidental impact' incidents and the need to protect MCP's from unnecessary damage and being mistaken for door release mechanisms.

- Continued attention to the location of MCP's and their repositioning to less vulnerable positions, should assist in reducing UwFS caused by such things as impact from wheelchairs, storage cages and cleaning equipment.

5.2.7 'Other'

Figure 16 illustrates that incidents recorded within the 'other' specific cause category accounted for 185 incidents. On further analysis of these incidents, it is evident that many of these should have been allocated to a more relevant specific cause. Figure 22 illustrates these incidents, realigning the causes to the topic areas covered in paragraphs 5.2.3 to 5.2.6 above. It should also be noted that one incident recorded as a UwFS, should have been recorded as a fire incident, resulting from an electrical failure in a wall socket.

More accurate categorisation of incidents will provide improved management information supporting mitigation measures.

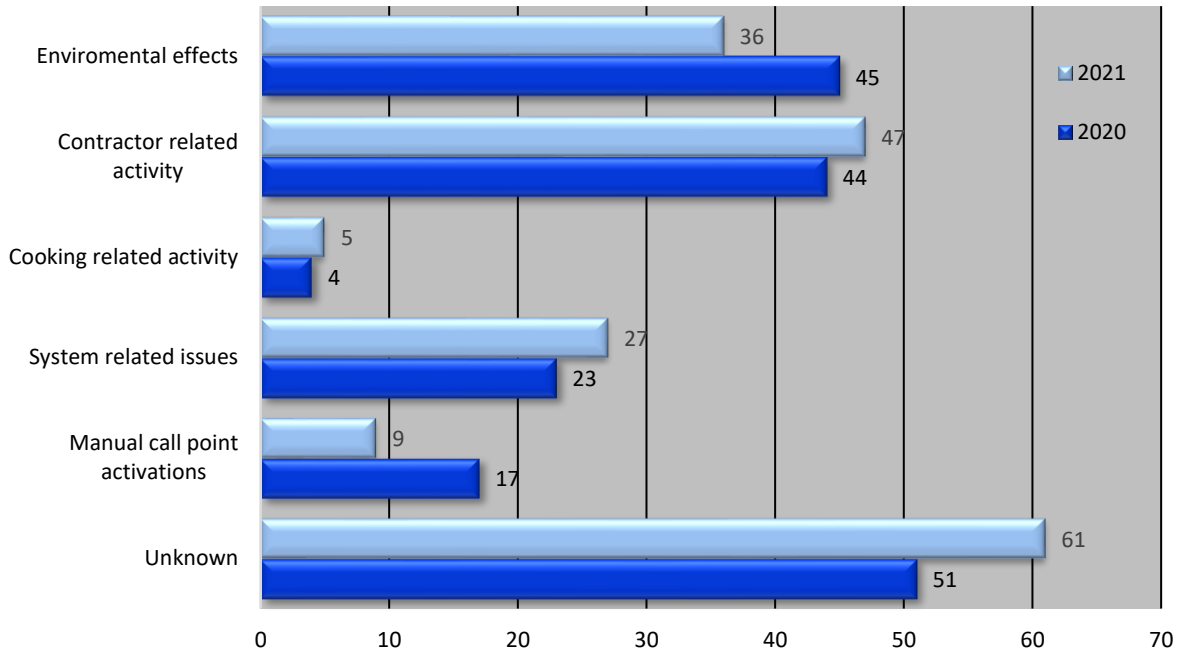


Figure 22 break down of 'Other' category UwFS aligned with paragraphs above

Summary of main points:

- There is a continuing trend in the recording of UwFS incidents within the ‘other’ specific cause category, with similar numbers between the 2020 and 2021 reporting periods.
- The majority of these 'other' category incidents should have been recorded in more appropriate specific cause categories to improve the accuracy of management information.

5.3 COMBINED DATA OF FIRE & UWFS 2021

5.3.1 Fires and UwFS by Time

Figure 23 illustrates the incidence of Fire and UwFS analysed on an hourly basis. In respect of fire incidents, there is a relatively even spread of incidents across the 24 hour period. However, there is a marked difference with UwFS. It can be seen that the number of UwFS rises sharply from approximately 06:00 hours, with small fluctuations and a steady decline until 17:00 hours, where again there is a small number of fluctuations, before falling again between 20:00 and 23:00 hours.

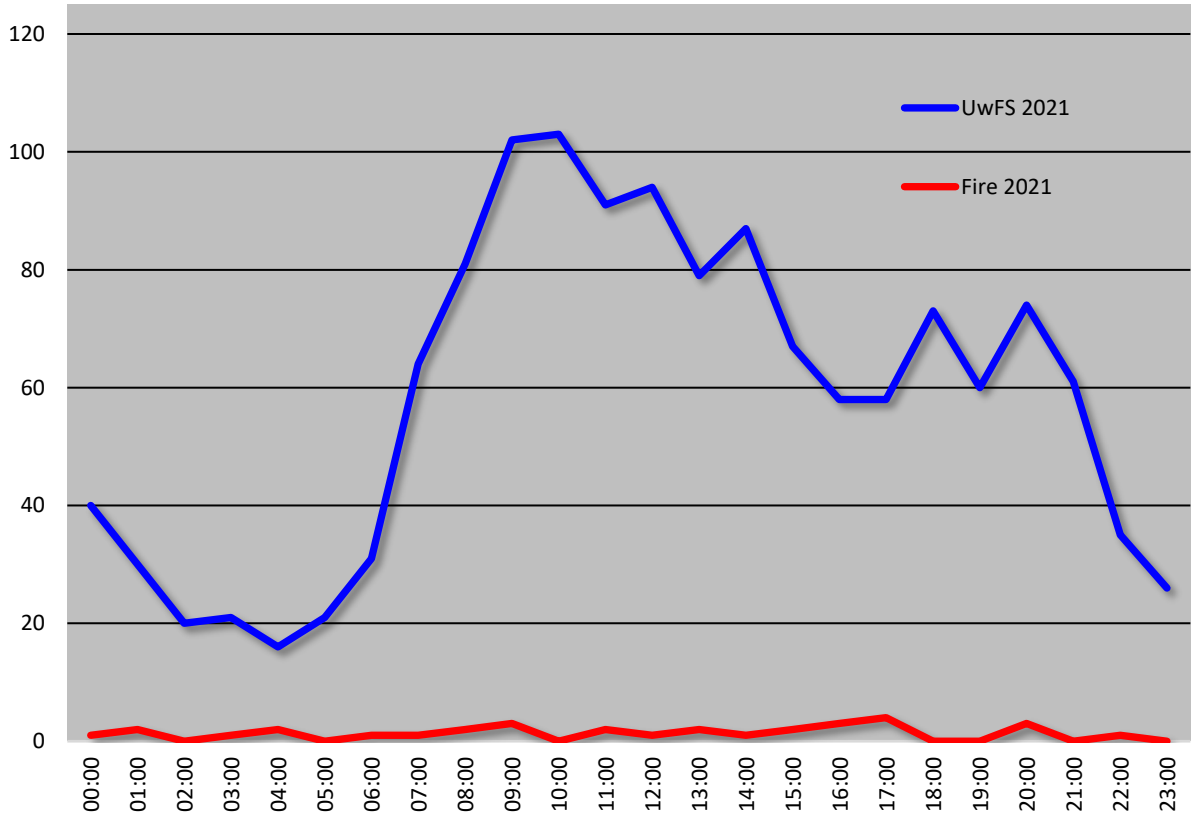


Figure 23 Fires and UwFS by Time

5.3.2 Fire and UwFS by Area

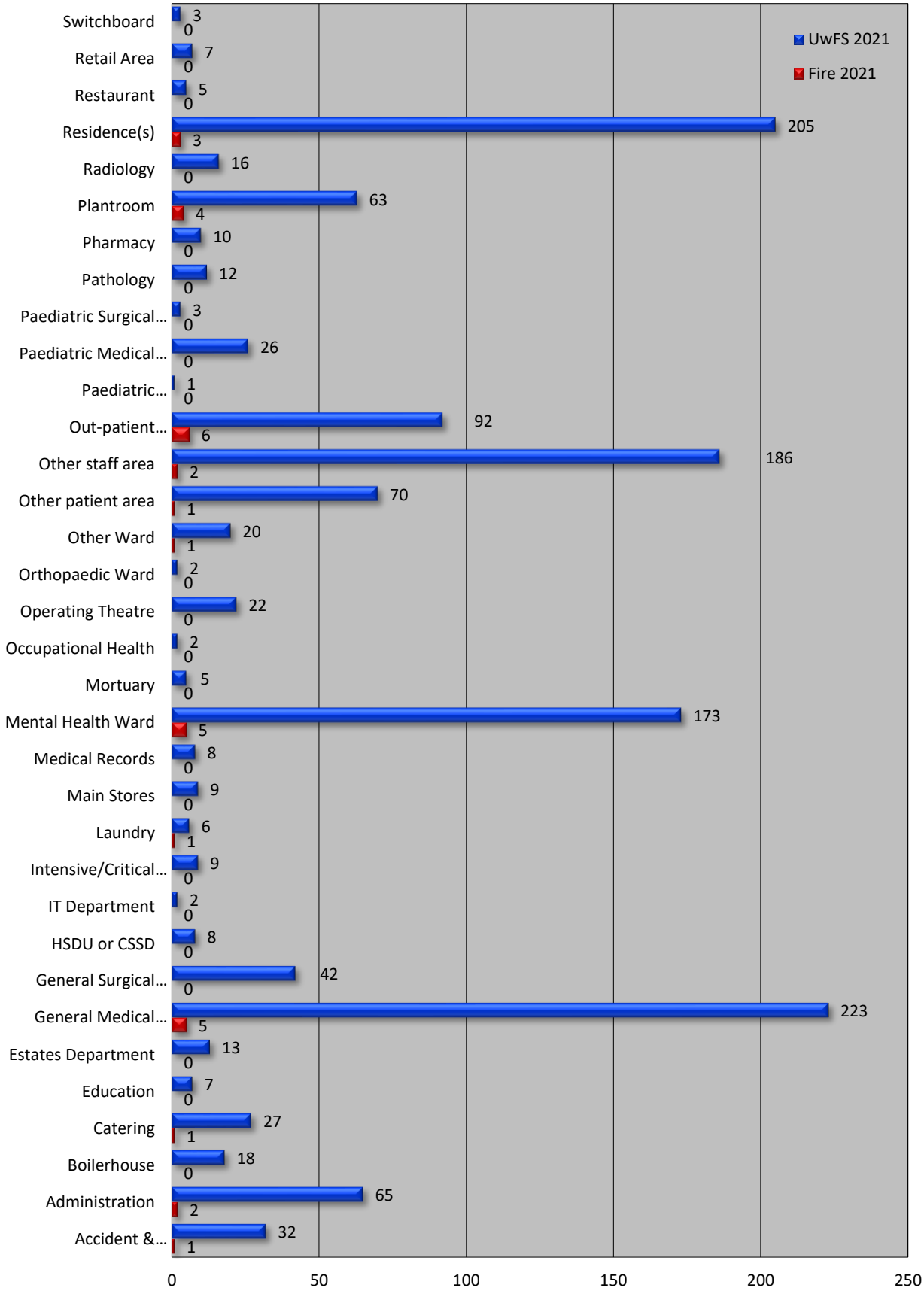


Figure 24 Fire and UwFS by Area

As indicated in Figure 24 above, the highest incidence of fires (coloured red) originated in the 'Outpatient Department' category, accounting for 6 (19%) of all fire incidents. This was followed by 'Mental Health Ward' and 'General Medical Ward' each accounting for 5 incidents (16%).

With regard to UwFS (hatched in blue), the highest category is attributed to General Medical Wards accounting for 223 incidents (16%), similar to the 219 incidents reported during 2020.

Staff Residences, Other Staff Areas and Mental Health Wards account for 205, 186 and 173 respectively, Mental Health Wards demonstrating a significant decrease from the 204 incidents reported in the previous year. There were, however, noticeable increases from the 189 and 142 incidents, respectively, in the Staff Residence and Other Staff Area categories, reported in 2020.

5.3.3 Fire and UwFS by Room

This section of the report examines the breakdown of both fire and UwFS by the room of origin (see Figure 25).

Of the 32 fire incidents reported, 4 were recorded in the 'Other' category, 2 of which were in external areas, not currently assigned as a specific room category. Of the remaining 2 incidents categorised as 'other', 1 should have been identified as 'office'.

A further 6 fires occurred in single bedrooms, an increase on the previous years reported 2 incidents, where 5 out of the 6 fires were caused by deliberate means involving the Mental Health sector.

Of note, is an increase in reported fire incidents within local kitchens, rising from 2 in 2020 to 5, reversing the downward trend of the previous report.

Of the 1392 UwFS incidents, 535 UwFS incidents occurred in corridors or circulation routes, a slight decrease, but almost identical to the 539 incidents reported in 2020. 203 of these occurred as a result of actuation of MCP's, an increase on the previous year's 166 reported incidents.

As noted previously, careful siting of MCP's or the provision of additional protection, together with an increased awareness of the need for care when manoeuvring equipment in the vicinity of MCP's, can have a positive effect in reducing the number of incidents.

There were 179 incidents reported in the 'Other' room category, an increase on the 135 incidents reported in 2020. The majority of these incidents should have been recorded in more specific categories, as listed in the online system.

The 'local kitchens' category returned a figure of 127 incidents, matching that of the previous year. As with the previous year, the majority of these incidents

(79%) can be attributed to poorly managed cooking related activities, such as leaving doors into corridors open, unattended cooking and burnt toast.

Of the 90 incidents associated with ‘Single bedrooms’, approximately a third of specific causes were identified as ‘other’ (32), with ‘steam from showers/bath’ accounting for 20. Of particular concern are those instances accounting for over half of incidents in single bedrooms, where vaping or smoking has been the cause, but incorrectly recorded as ‘other’ with regard to the specific cause.

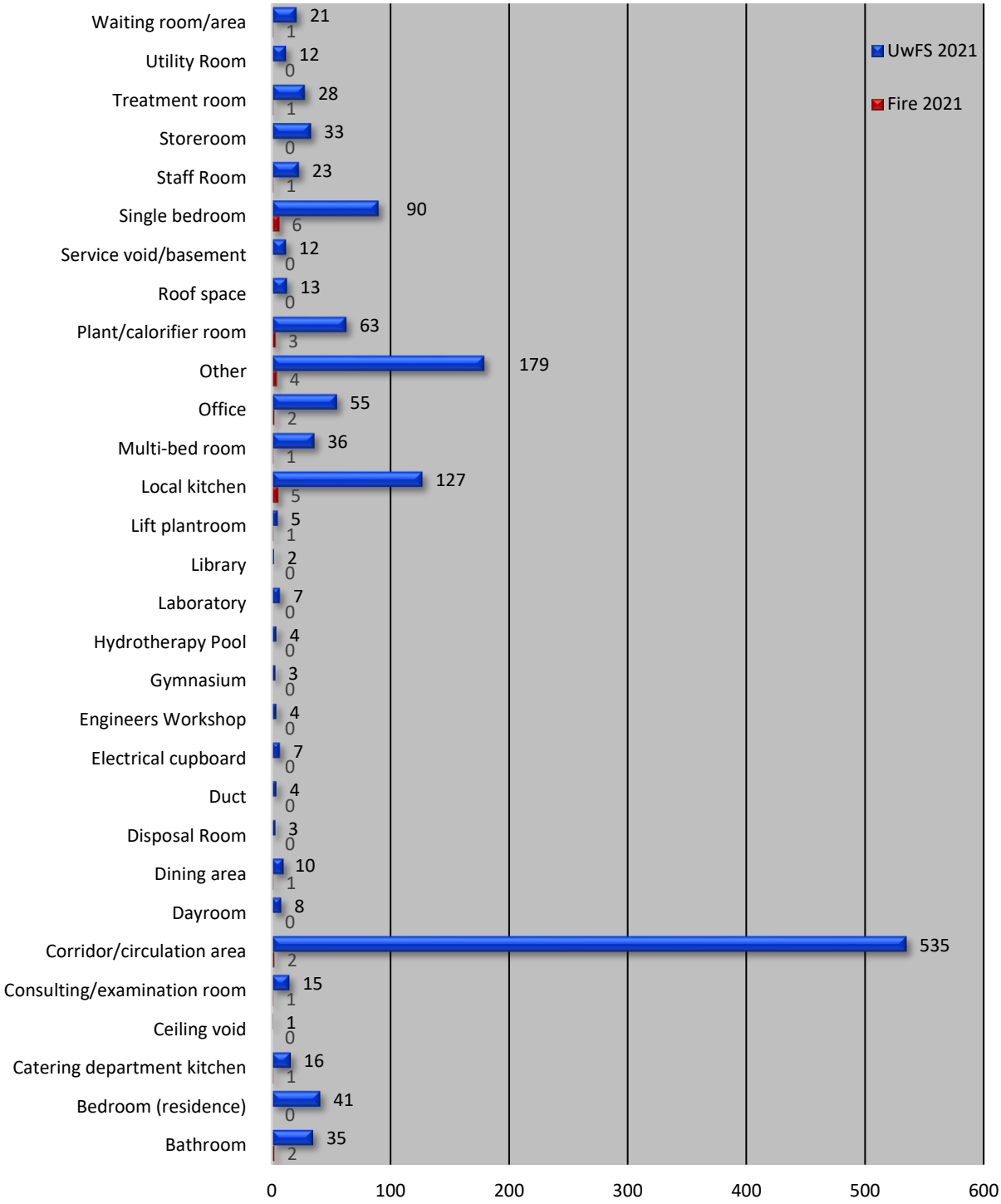


Figure 25 Fire and UwFS by Room

Summary of main points

- The data shows the rate of fire incidents to be fairly constant through a 24-hour period. UwFS incidents show a sharp increase during the working day, with fluctuations extending to early evening, before tailing off. Human activity and the potential influence of Covid-19 can be linked to UwFS and again, highlights the need for measures to make staff, patients and visitors aware of the bad practices that cause UwFS.

- Within the Mental Health sector, there has been a decrease of 31 reported UwFS and 3 Fire incidents, compared to that in 2020. This displays some positive progress and improvement in fire safety management within the sector.

- The fire and UwFS by area data, shows that 'Mental Health Wards', 'Other Staff Areas', 'Staff Residences' and 'General Medical Wards' remain the primary areas where incidents occur, but with 'Outpatient Department' exhibiting the highest number of fire incidents for 2021. This demonstrates a repetitive reporting theme and indicates that NHS organisations should focus on these sectors to reduce incidents and risk.

- The analysis of data by rooms has highlighted that as in 2020, most UwFS incidents originate in 'corridors/circulation areas', 'other', 'local kitchens' and 'single bedrooms'. It should be noted that many of the 'other' incidents could have been reported in a more relevant category.

6.0 CONCLUDING COMMENTS AND RECOMMENDATIONS

6.1 The analysis of fire incidents and unwanted fire signal data has indicated some significant trends. During 2021, 32 fire incidents were reported continuing the downward trend of recent years, representing a 20% reduction in reported fires in 2020. Whilst this is encouraging, it is worth noting that Covid-19 may have had an influence over the number of reported fire incidents.

6.2 There is an obvious need to maintain a clear focus on the causes of fires and on how these might be prevented, particular attention again being paid to the control of ignition sources involving the Mental Health sector. The more fires that occur, no matter how minor, the greater the chances of a serious incident occurring. Fire incidents will always have the attendant disruption to health service delivery and possible legal action from the FRS, if it is seen that there were any weaknesses in policy or procedures.

6.3 In 2021, the highest cause of fires was attributed to electrical failure with 11 incidents, closely followed by deliberate fire raising with 9 incidents. This highlights the need to ensure electrical testing and maintenance, for both fixed installations and portable appliances, is undertaken in accordance with the relevant standards. Deliberate fire raising continues to be a concern within the Mental Health sector, where control of ignition sources and management of electrical items remain an issue.

6.4 Overall, the majority of fires were detected early and dealt with effectively, averting much more serious outcomes. However, there were fire incidents where without the intervention of either hospital staff, FRS personnel or both, the outcomes could have been more serious. This underlines the importance of maintaining staff awareness and robust training regimes addressing such issues as good housekeeping, effective response procedures and management of ignition sources and electrical equipment.

6.5 UwFS have shown a notable decrease in 2021 down to 1392. In numerical terms, this amounts to a reduction of 100 incidents (7%). Although identifying a smaller decrease than that identified in 2020, this remains noteworthy in terms of the continued decline year on year.

6.6 It is clear to see from the data that human behaviour remains an influencing factor on a large proportion of UwFS. It therefore continues to be important that further management be implemented in order to ‘design out’ many of these incidents, achieved through increased awareness amongst organisations about current standards, technological advances and user responsibilities.

6.7 As noted previously these incidents cause considerable disruption to both the NHS and the FRS. Continued efforts to reduce the occurrence of UwFS should be regarded as a high priority and will contribute significantly to the saving of time and resources needed in dealing with these incidents, both for

the healthcare sector and FRS. However, on no account should the endeavours to reduce UwFS jeopardise patient safety.

6.8 Accuracy of reporting and the continued collection of 'specific cause' information continues to enhance trend analysis and performance management. It should be noted that all fire alarm activations should be recorded whether or not the FRS are informed and irrespective of their attendance.

6.9 The report examined the frequency of activations through use and/or abuse of MCP's. Current standards promote the use of protective covers to MCP's, some fitted with screechers where necessary. These should be provided for all new installations and upgrades; furthermore, NHS organisations should give consideration to expediting the retrofitting of covers to MCP's that are prone to abuse. Subject to robust key management arrangements, the use of key operated call points could be considered where protective covers may not be appropriate in the Mental Health sector.

6.10 Overall, incidents associated with 'other environmental effects' remains the top cause of UwFS, invariably being linked to human behaviour. 'Cooking fumes' has proved to be the next highest cause, with 'system fault/design' a close third. The latter cause demonstrates a seemingly ongoing problem with ageing fire detection and alarm systems, as well as associated issues with a lack of replacement parts due to the obsolescence of installed devices.

6.11 Although data shows a decrease in the number of reported incidents, UwFS attributed to cooking related activities, continues to be of concern. Of particular note are the numbers still occurring in staff residences, emphasising the need to improve management and raise awareness of the dangers of unattended cooking. There appears to be re-occurrences of unattended cooking and doors being left open, activating detectors in corridors/circulation areas.

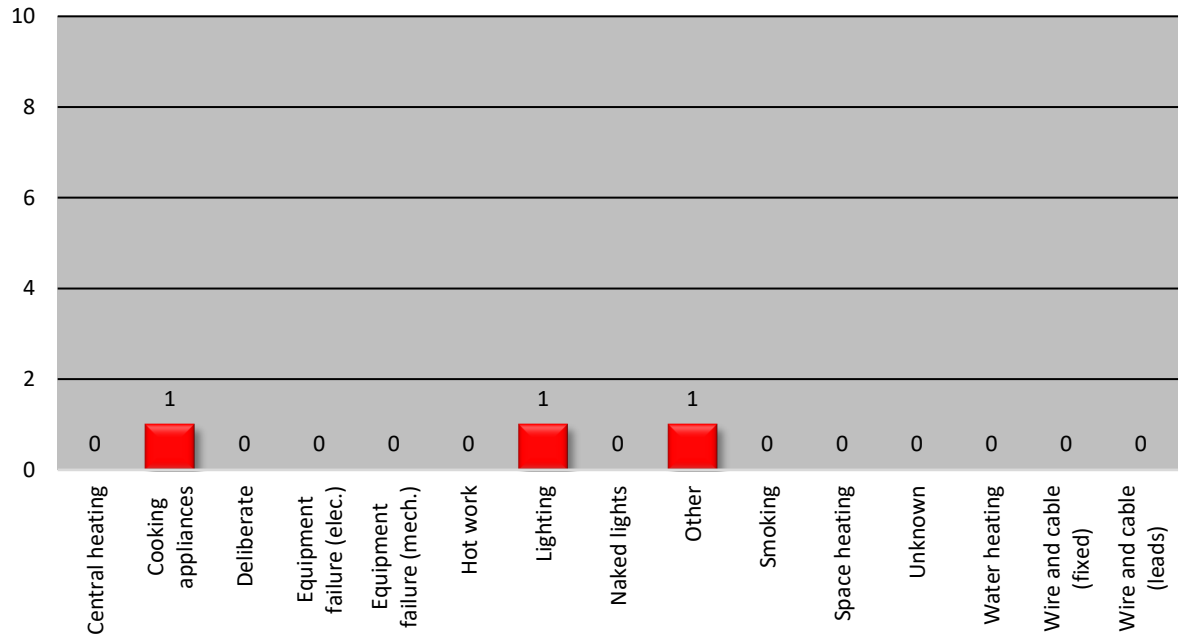
6.12 NHS organisations should regularly update the online system with respect to the number of detection devices fitted in their facilities. Notwithstanding this requirement, there still remain several sites where numbers of devices appear to be unknown and not populated in the system. This process enables the calculation of accurate performance scores which are reflected in Appendix C and D. Furthermore, NHS organisations should endeavour to achieve the defined targets for reduction of UwFS calculated through the online system.

6.13 FRS response procedures vary from region to region and indeed site to site. Therefore, NHS organisations should liaise with their respective FRS to clarify the mobilisation arrangements and ensure that their own procedures reflect the anticipated FRS response.

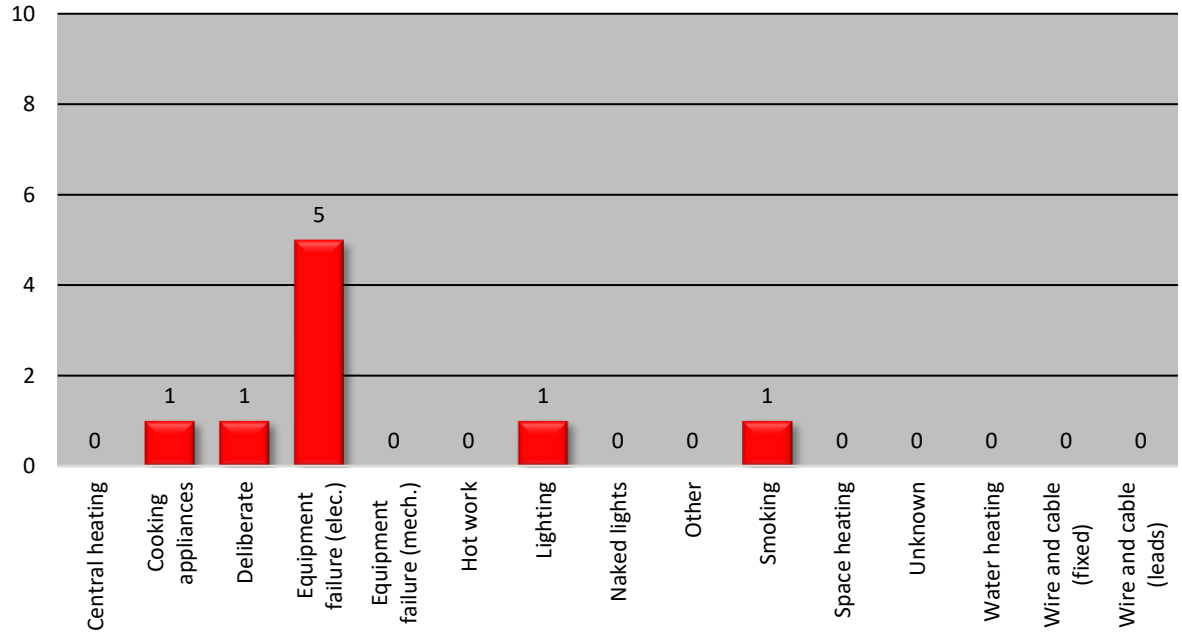
Appendix A

Summary of Fire Incidents 2021 by Cause & Organisation

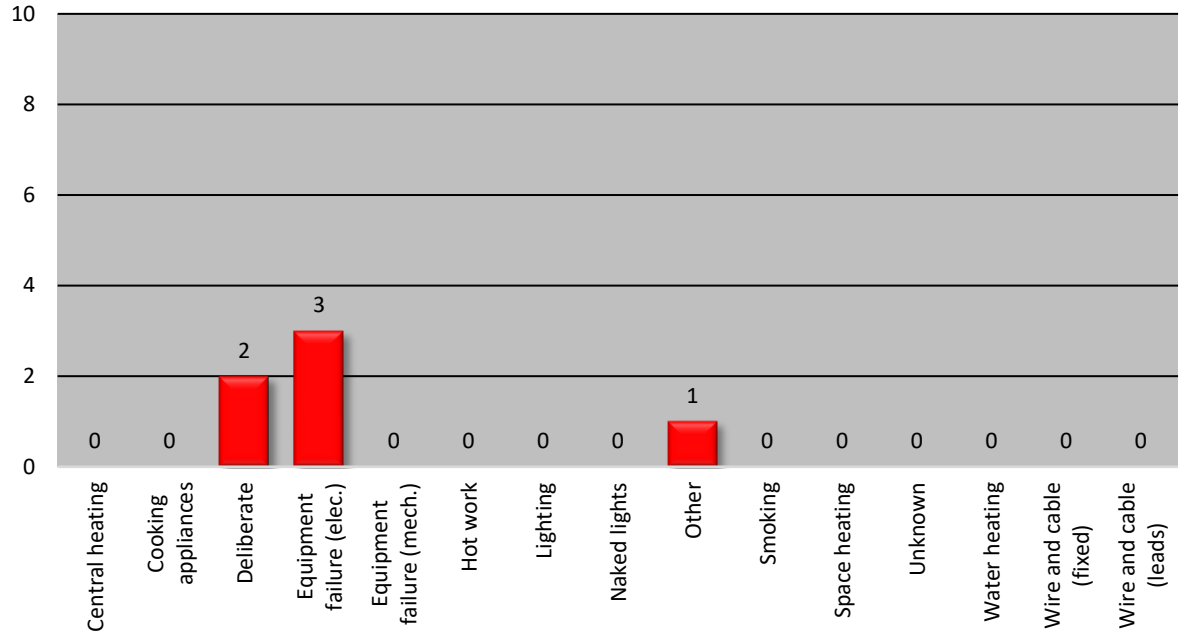
Aneurin Bevan University Health Board - 3 Incidents



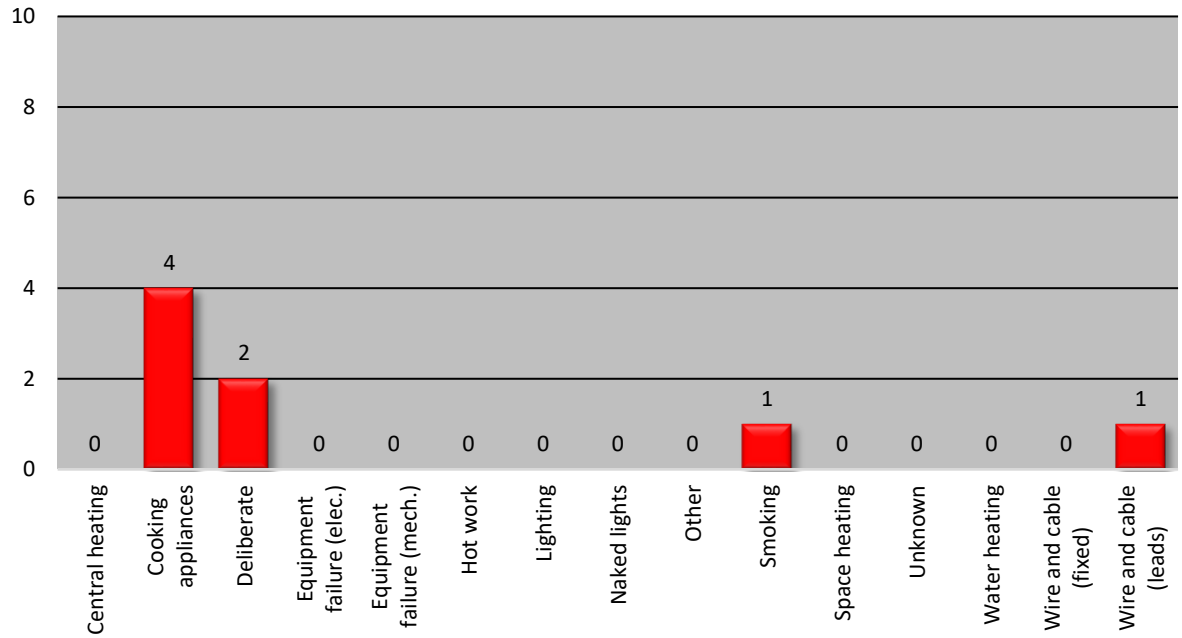
Betsi Cadwaladr University Health Board - 9 Incidents



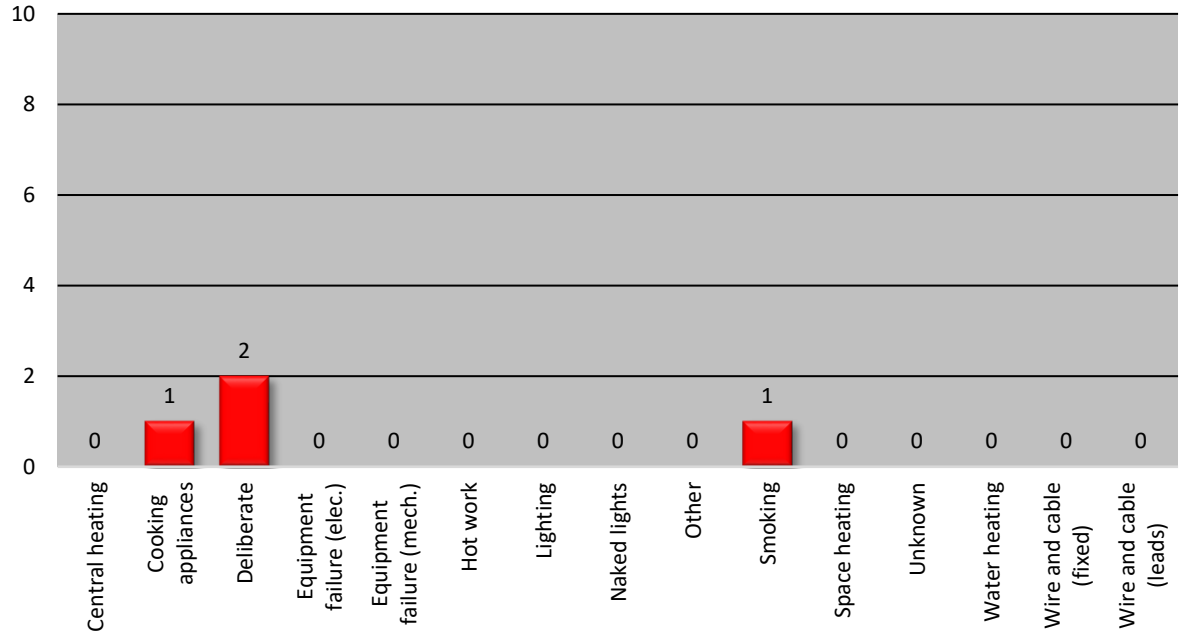
Cardiff & Vale University Health Board - 6 Incidents



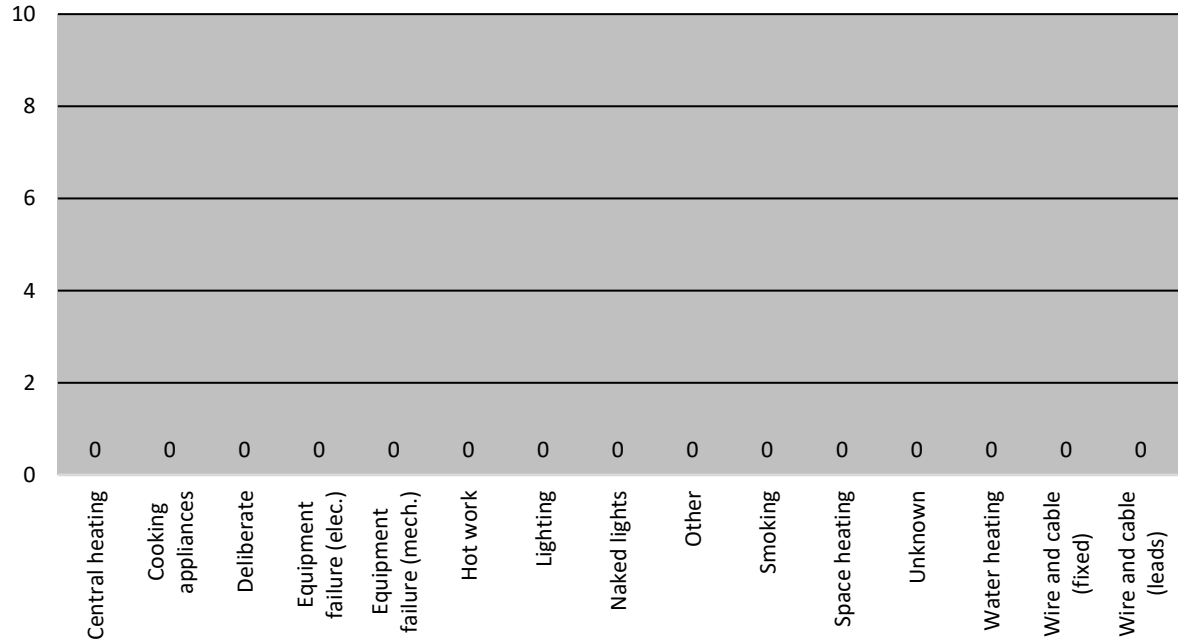
Cwm Taf Morgannwg University Health Board - 8 Incidents



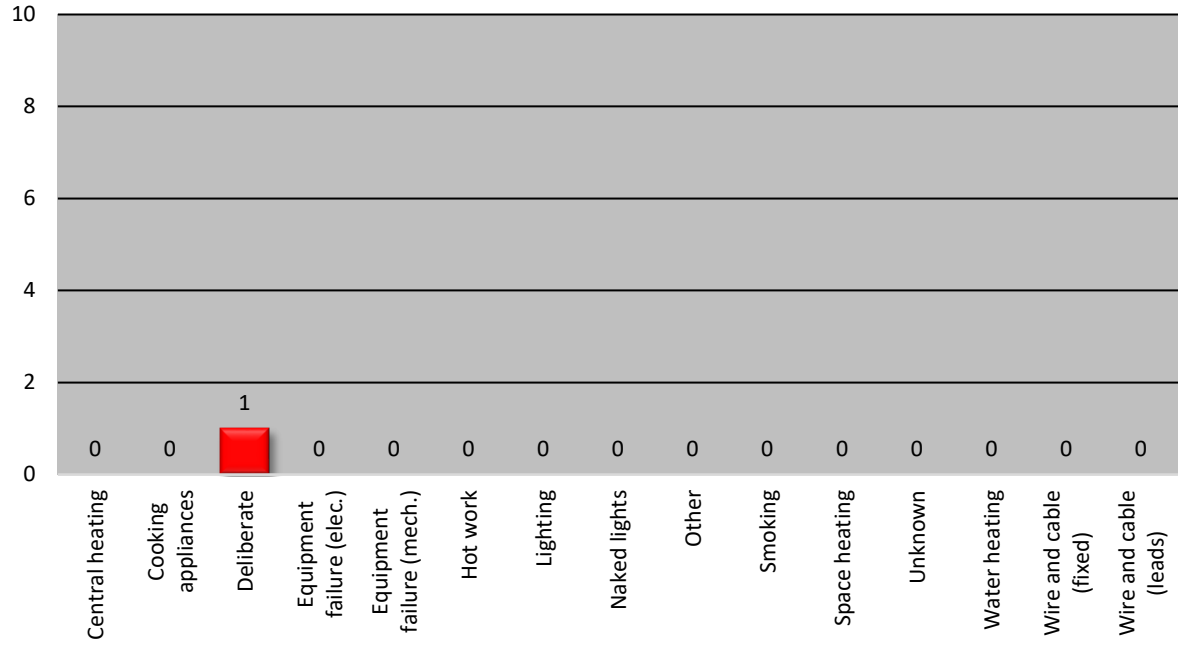
Hywel Dda University Health Board - 4 Incidents



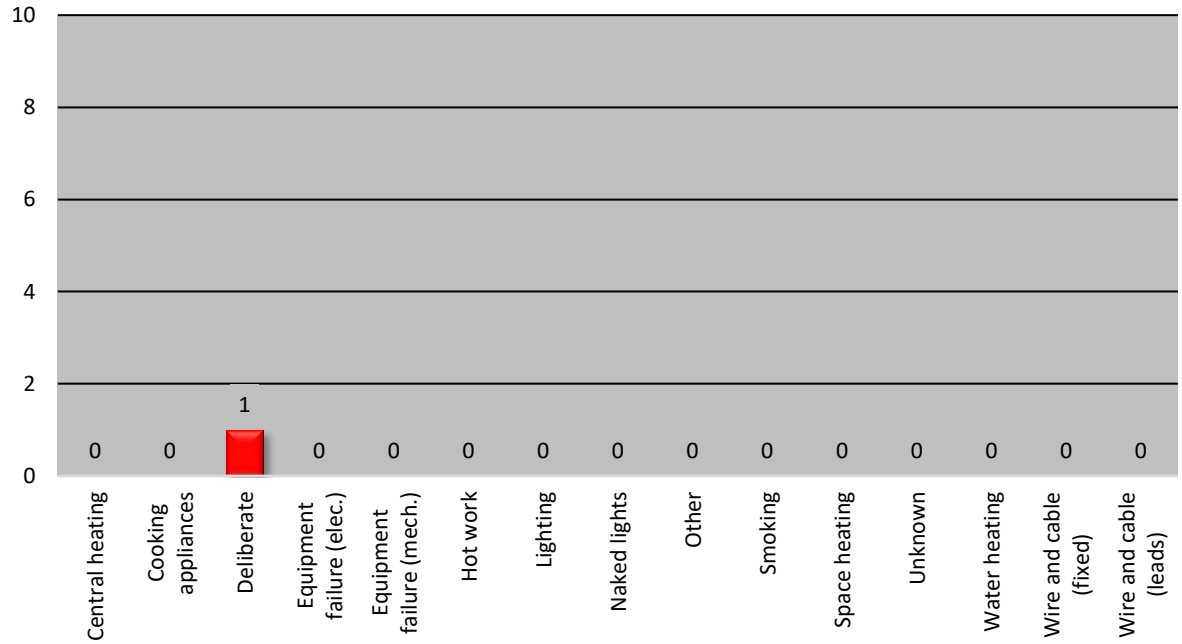
Powys Teaching Health Board - 0 Incidents



Swansea Bay University Health Board - 1 Incident



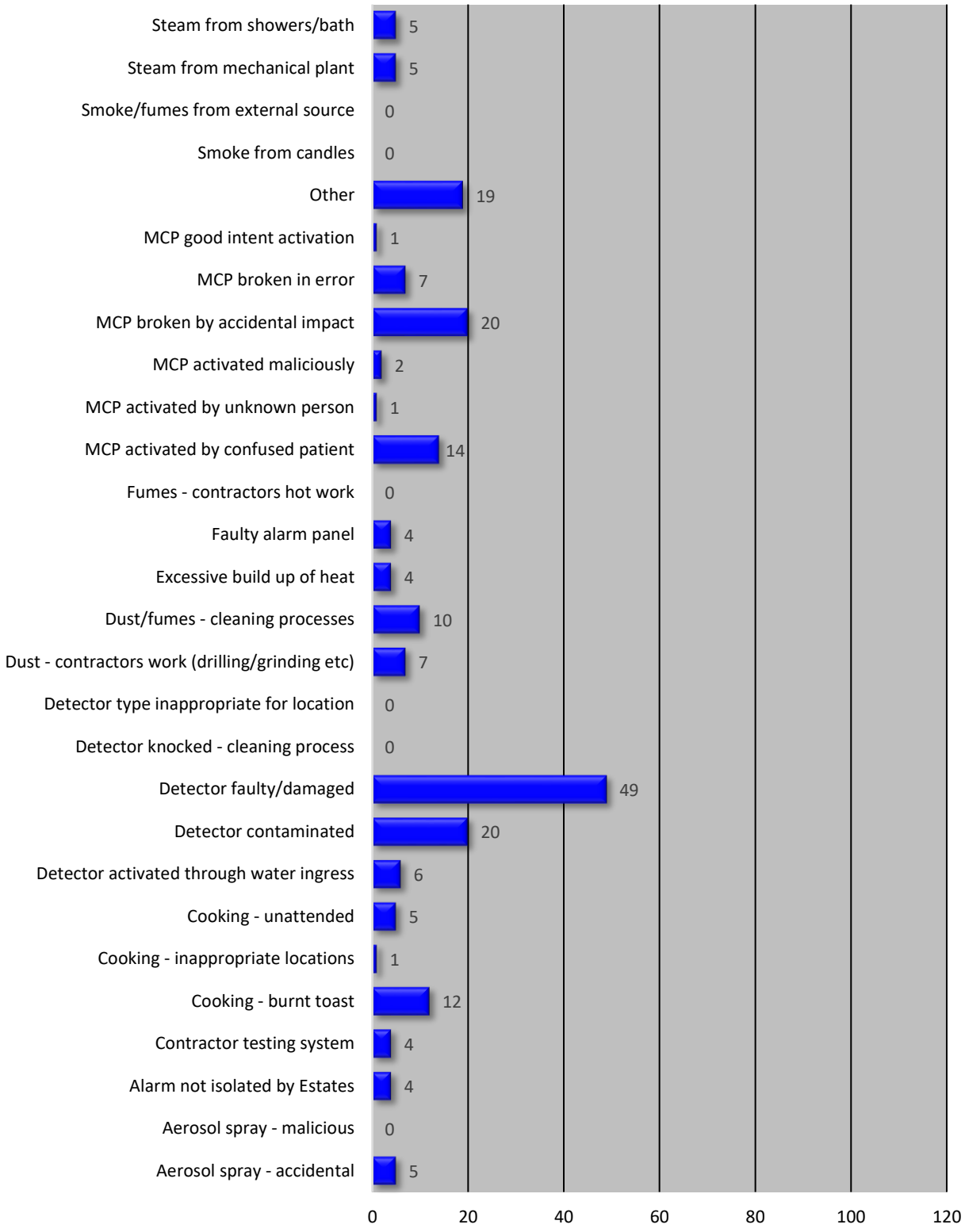
Velindre NHS Trust - 1 Incident



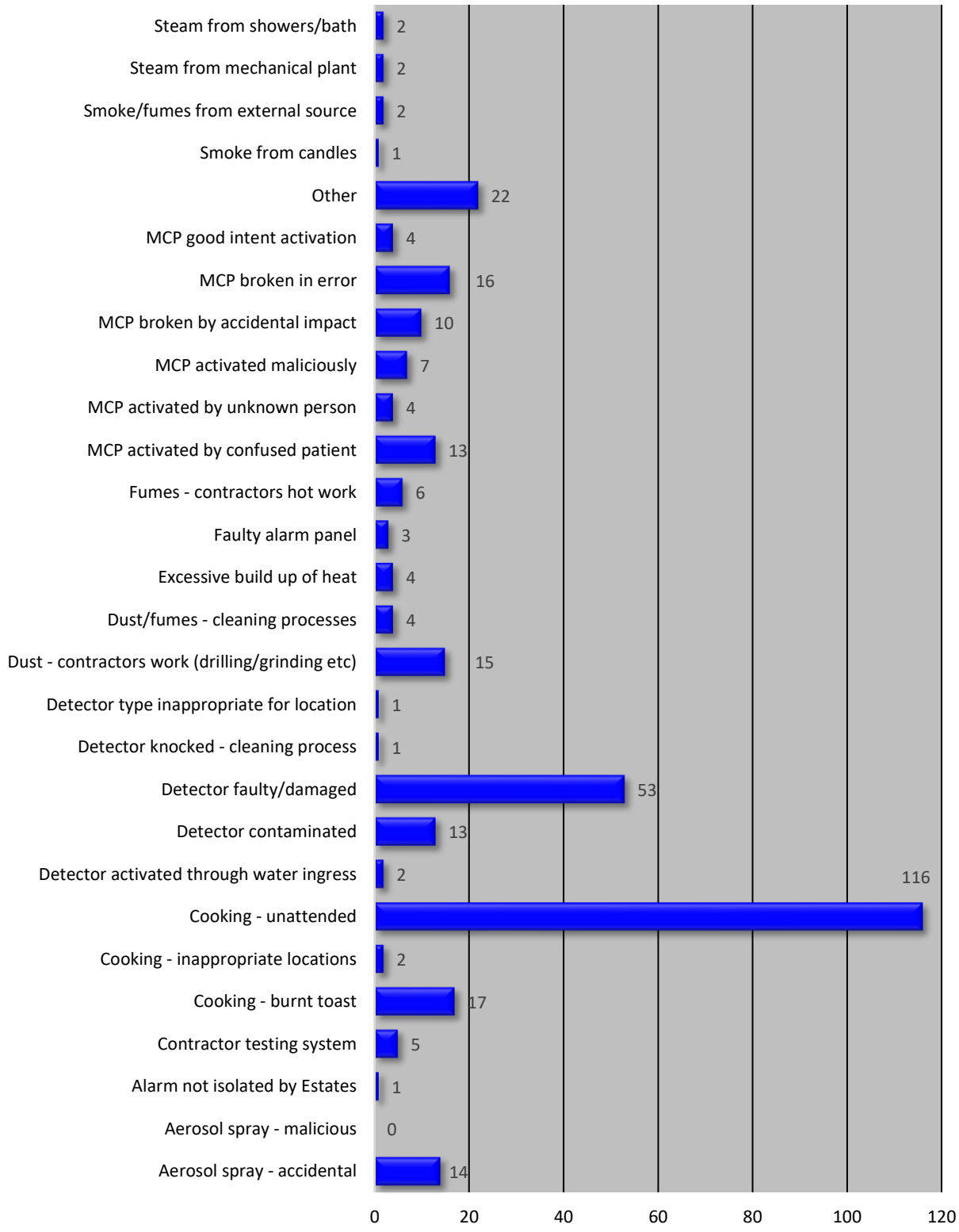
Appendix B

Summary of UwFS 2021 by Specific Cause & Organisation

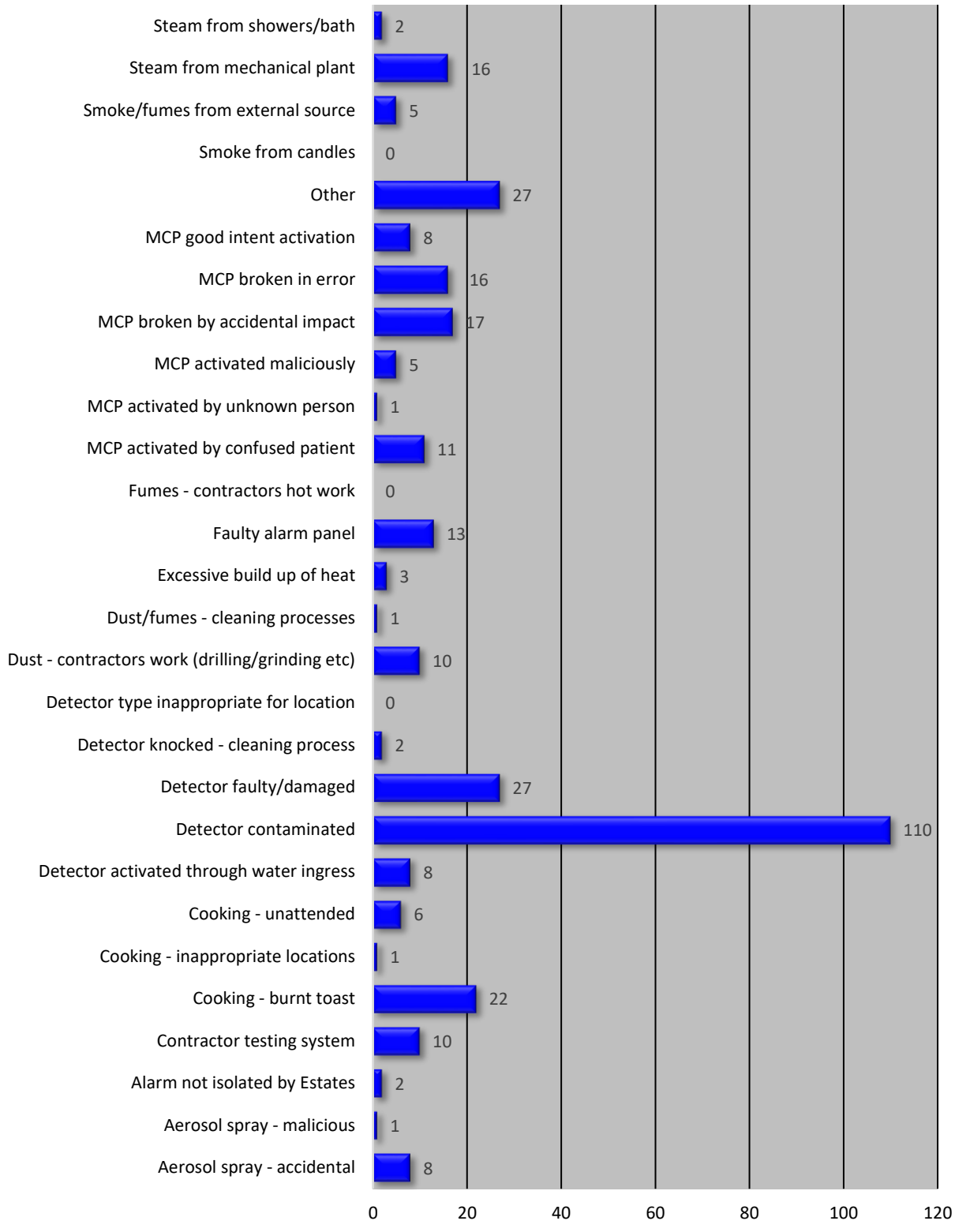
Aneurin Bevan University Health Board - 205 Incidents



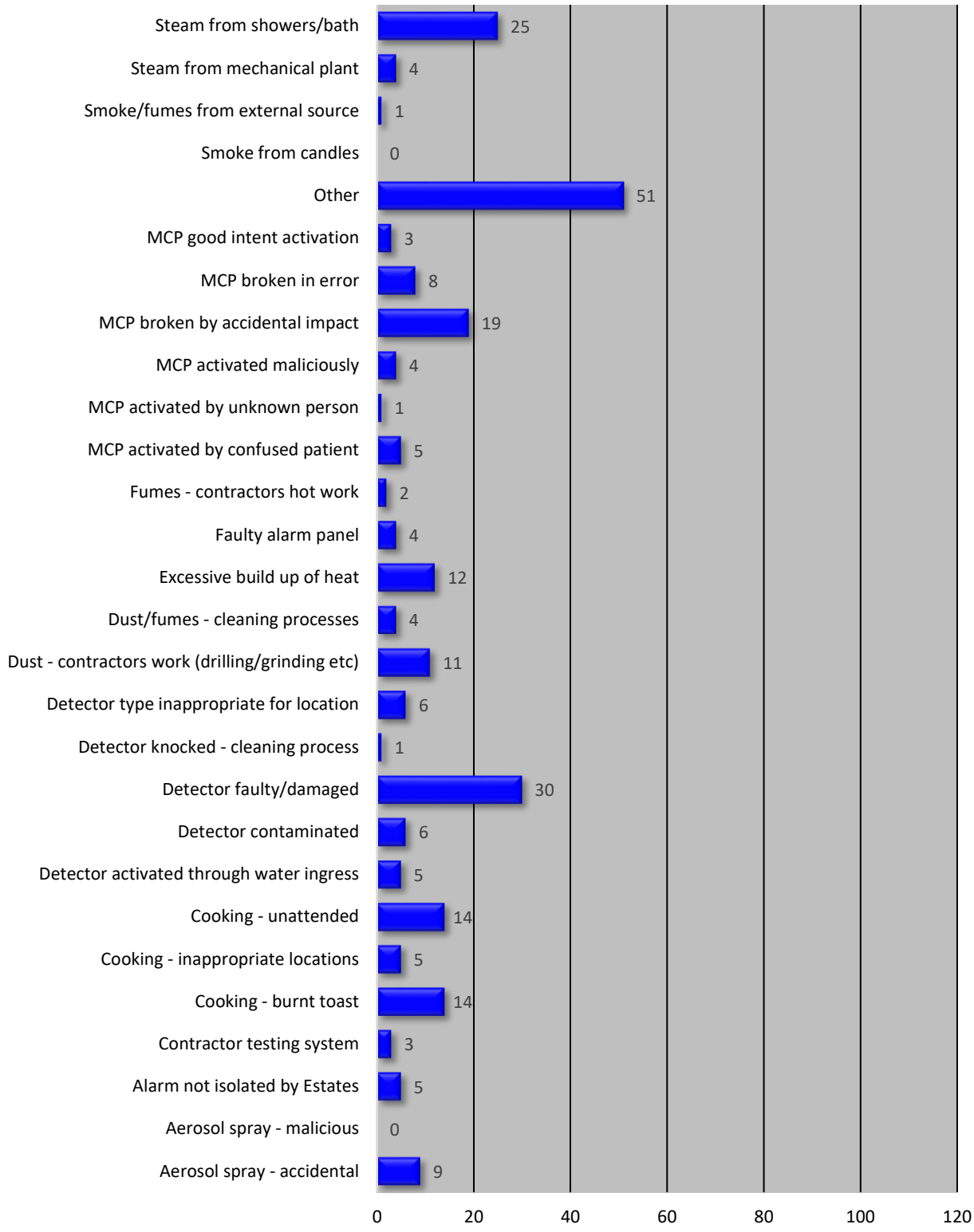
Betsi Cadwaladr University Health Board - 340 Incidents



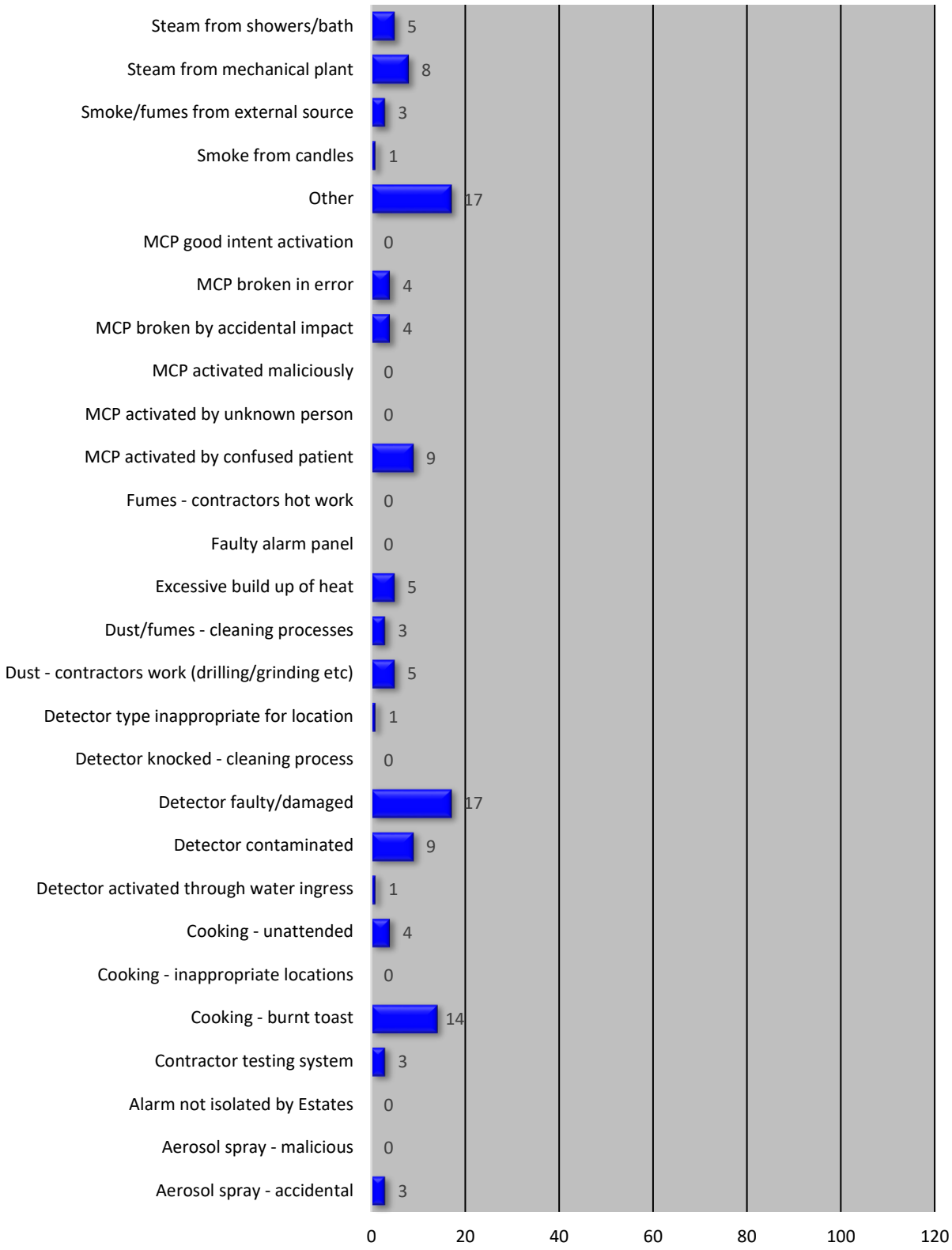
Cardiff & Vale University Health Board - 332 Incidents



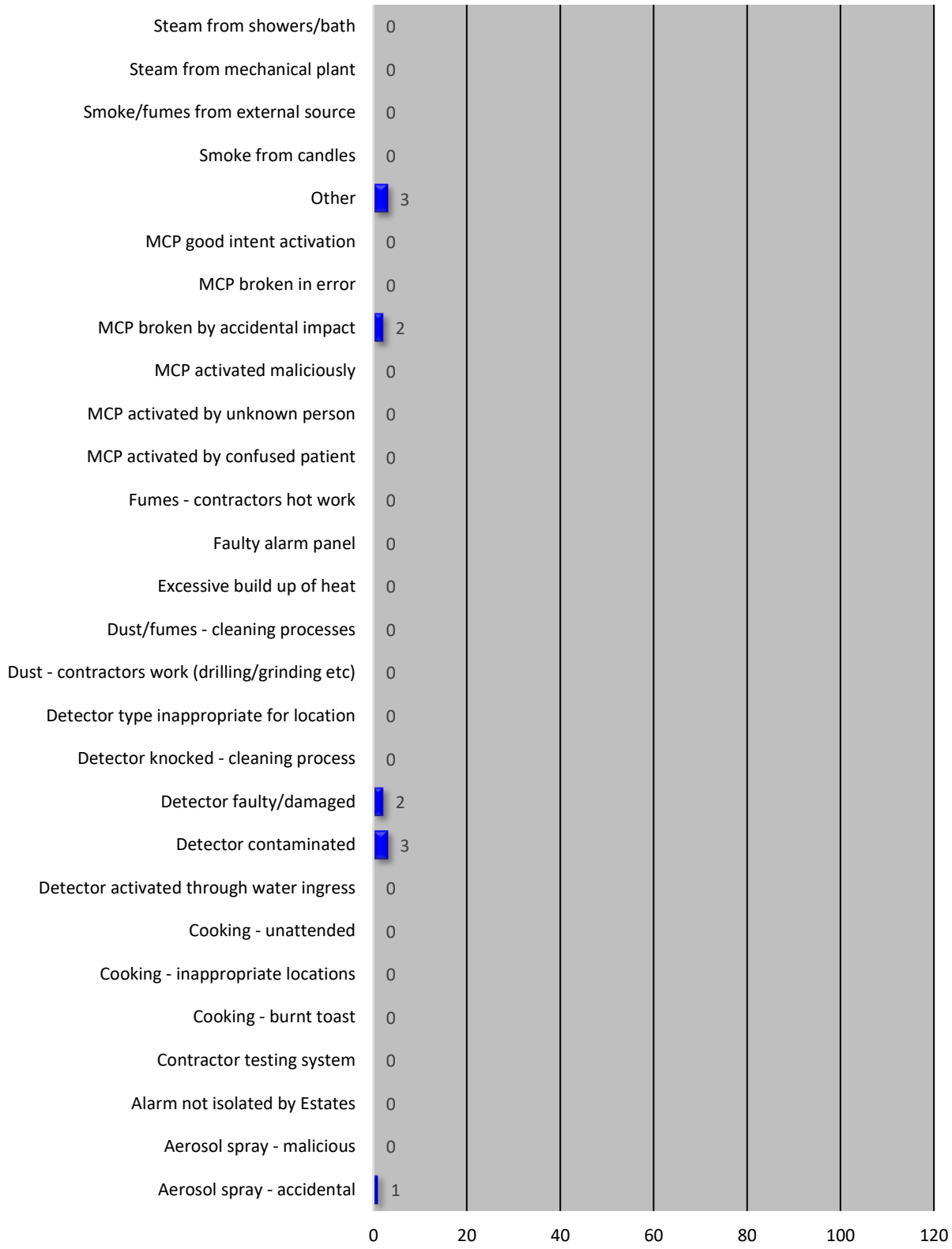
Cwm Taf Morgannwg University Health Board - 252 Incidents



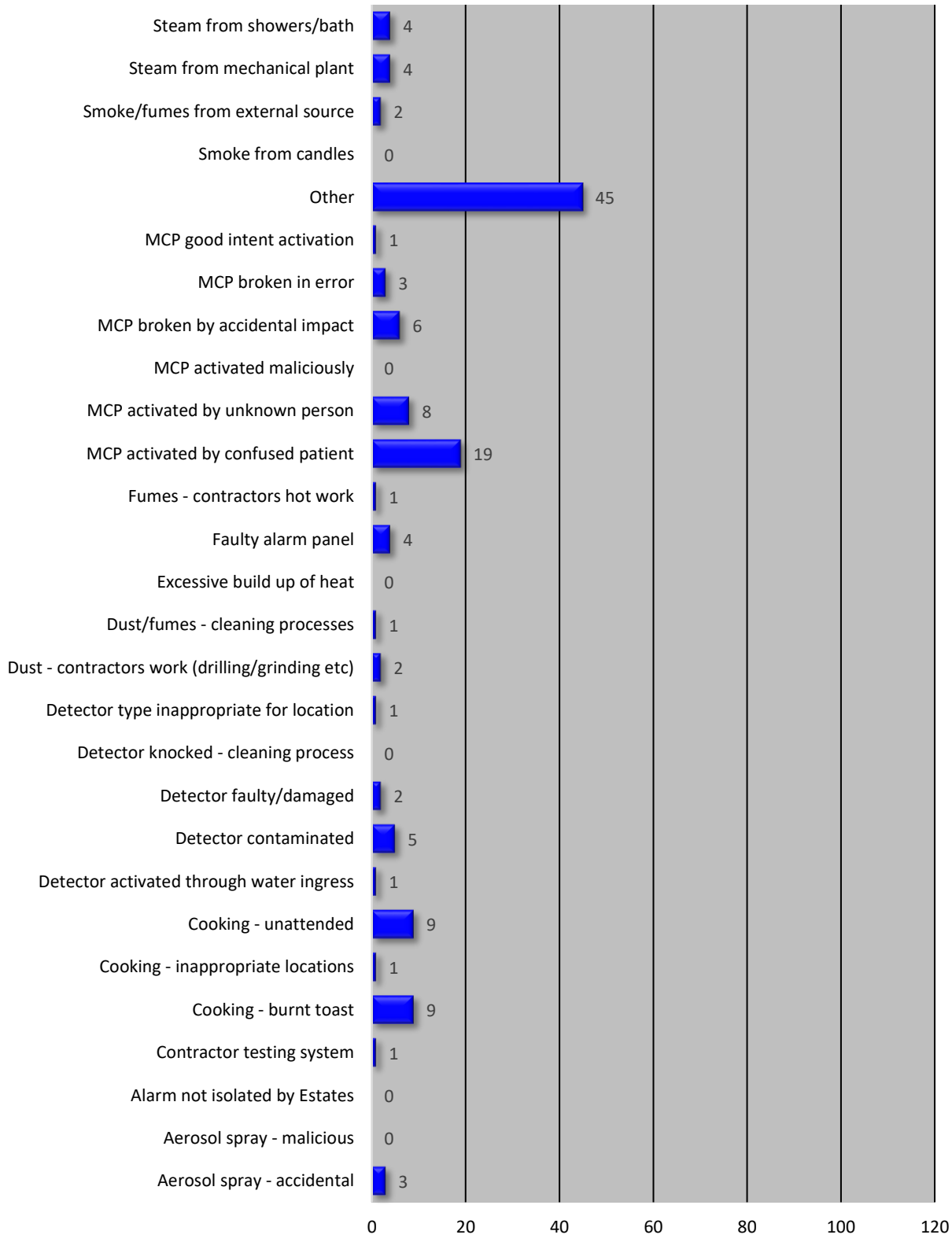
Hywel Dda University Health Board - 116 Incidents



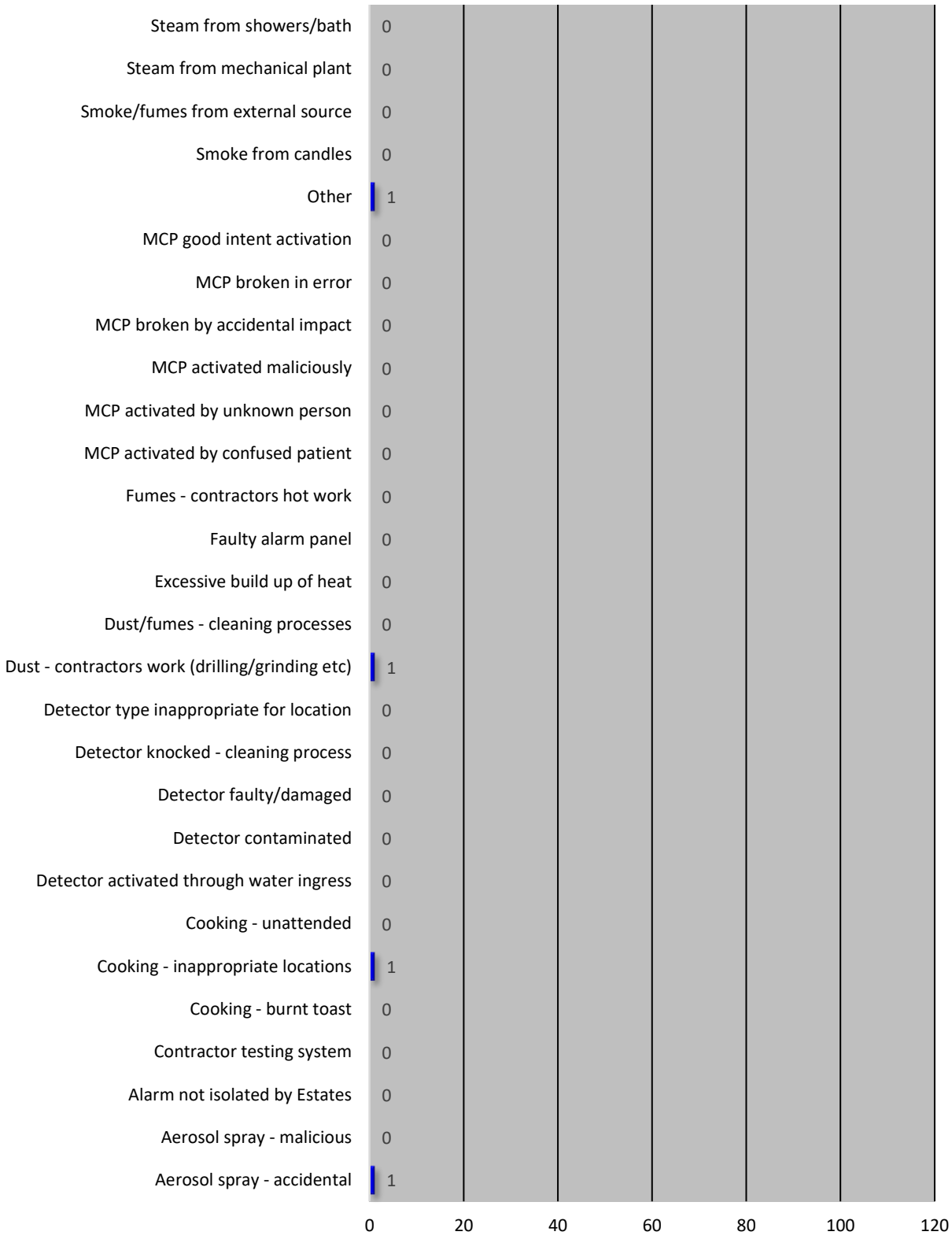
Powys Teaching Health Board - 11 Incidents



Swansea Bay University Health Board - 132 Incidents



Velindre NHS Trust - 4 Incidents

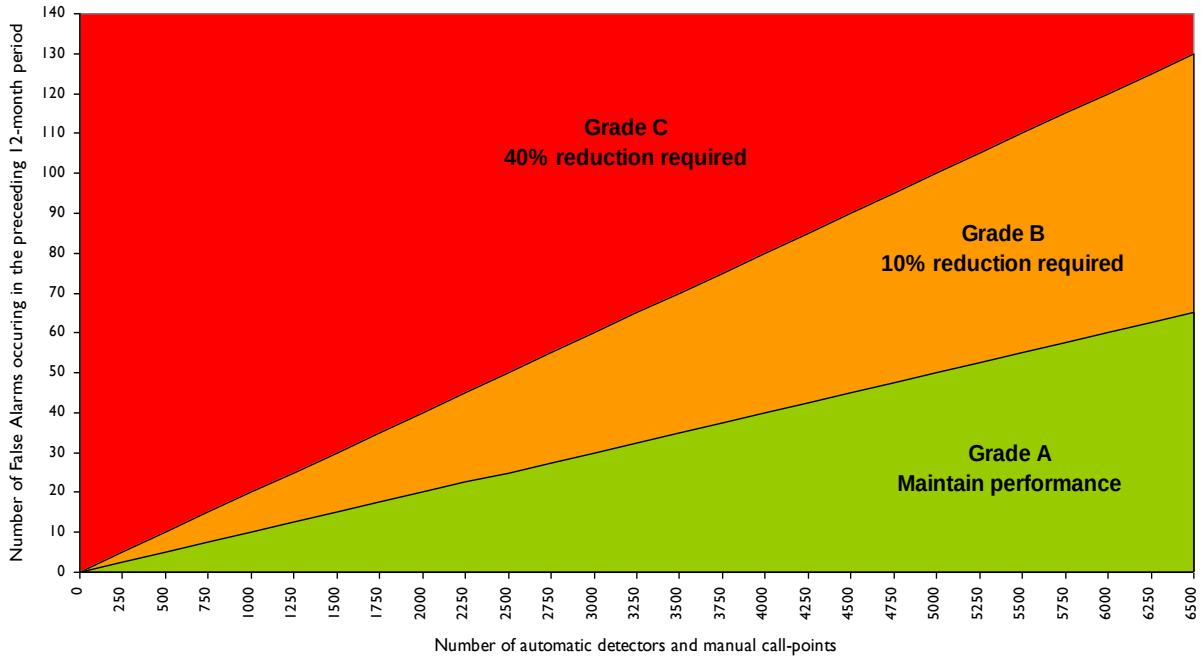


Appendix C

False Alarm and UwFS Performance Chart

The following chart illustrates the performance indicator template for false alarms and UwFS as shown in WHTM 05-03 Part H. This grading system determines the target for false alarm reduction, based on the ratio of incidents and actuation devices.

The performance rating is automatically updated whenever incidents are reported via the online reporting system.



Appendix D contains tabulated data on each organisation's performance by site.

Appendix D

False Alarms/UwFS Performance Grading by Site

Hospital	False Alarms incl UwFS	Actuation Devices	Performance Grade
Aneurin Bevan University Health Board			
Chepstow Community Hospital	7	504	B - 10% reduction in UwFS
County Hospital	25	1018	C - 40% reduction in UwFS
Grange University Hospital	19	2978	A - performance should be maintained
Llanfrechfa Grange	1	400	A - performance should be maintained
Maindiff Court Hospital	6	388	B - 10% reduction in UwFS
Monnow Vale Health & Social Care Facility	2	177	B - 10% reduction in UwFS
Nevill Hall Hospital	36	2850	B - 10% reduction in UwFS
Royal Gwent Hospital	39	4560	A - performance should be maintained
St Cadoc's Hospital	32	1225	C - 40% reduction in UwFS
St Woolos Hospital	5	953	A - performance should be maintained
Ysbyty Aneurin Bevan	6	1150	A - performance should be maintained
Ysbyty Tri Chwm	1	130	A - performance should be maintained
Ysbyty Ystrad Fawr	17	2267	A - performance should be maintained
Subtotals	196	18600	
Betsi Cadwaladr University Health Board			
Abergele Hospital	10	300	C - 40% reduction in UwFS
Ablett Unit	0	401	No incidents reported
Bodnant Psychiatric Unit	0	70	No incidents reported
Bron-y-Nant Residences 1 - 30	3	not specified	Not available
Bron-y-Nant Residences 31 +	11	not specified	Not available
Bryn Beryl Hospital	1	113	A - performance should be maintained
Bryn-y-Neuadd Hospital	12	790	B - 10% reduction in UwFS
Cefni Hospital	0	213	No incidents reported
Chirk Community Hospital	0	108	No incidents reported
Coed Celyn Support Unit	0	30	No incidents reported
Colwyn Bay Community Hospital	0	472	No incidents reported
Deeside Community Hospital	0	353	No incidents reported
Denbigh Community Hospital	0	281	No incidents reported
Dolgellau & Barmouth District Hospital	1	79	B - 10% reduction in UwFS
Eryri Hospital	1	155	A - performance should be maintained
Hergest Unit	4	176	C - 40% reduction in UwFS
Holywell Community Hospital	2	308	A - performance should be maintained
Llandudno General Hospital	8	871	A - performance should be maintained
Mold Community Hospital	4	161	C - 40% reduction in UwFS
North Wales Child & Adolescent Service	7	0	C - 40% reduction in UwFS
Penley Hospital	0	60	No incidents reported

Royal Alexandra Hospital	**0**	**357**	**No incidents reported**
Ruthin Community Hospital	**0**	**188**	**No incidents reported**
Staff Residences - Ysbyty Gwynedd	**58**	**not specified**	**Not available**
Staff Residences YGC	**77**	**not specified**	**Not available**
Ty Llewelyn	**0**	**205**	**No incidents reported**
Tywyn & District War Memorial Hospital	**1**	**106**	**A - performance should be maintained**
Ysbyty Alltwen Community Hospital	**1**	**346**	**A - performance should be maintained**
Ysbyty Glan Clwyd	**41**	**3200**	**B - 10% reduction in UwFS**
Ysbyty Gwynedd	**26**	**3625**	**A - performance should be maintained**
Ysbyty Maelor	**72**	**4514**	**B - 10% reduction in UwFS**
Ysbyty Penrhos Stanley	**0**	**230**	**No incidents reported**
Subtotals	**340**	**17712**	

Cardiff & Vale University Health Board			
Barry Hospital	**3**	**562**	**A - performance should be maintained**
Cardiff Royal Infirmary	**1**	**2000**	**A - performance should be maintained**
Hafan Y Coed	**22**	**1274**	**B - 10% reduction in UwFS**
Llandough Hospital	**67**	**6500**	**B - 10% reduction in UwFS**
Rookwood Hospital	**7**	**425**	**B - 10% reduction in UwFS**
St David's Hospital (Cardiff)	**3**	**600**	**A - performance should be maintained**
University Hospital of Wales	**224**	**20000**	**B - 10% reduction in UwFS**
Whitchurch Hospital	**0**	**2059**	**No incidents reported**
Subtotals	**327**	**33420**	

Cwm Taf Morgannwg University Health Board			
Caswell Clinic	**13**	**510**	**C - 40% reduction in UwFS**
Dewi Sant Hospital	**11**	**553**	**B - 10% reduction in UwFS**
Glanrhyd Hospital	**11**	**800**	**B - 10% reduction in UwFS**
Maesteg Community Hospital	**2**	**210**	**A - performance should be maintained**
PCH - Staff Residences	**14**	**426**	**C - 40% reduction in UwFS**
Pontypridd & District Hospital	**0**	**293**	**No incidents reported**
POW - Staff Residences	**13**	**234**	**C - 40% reduction in UwFS**
Prince Charles Hospital	**41**	**3480**	**B - 10% reduction in UwFS**
Princess of Wales Hospital	**51**	**4937**	**B - 10% reduction in UwFS**
Royal Glamorgan Hospital	**51**	**3743**	**B - 10% reduction in UwFS**
Taith Newydd	**0**	**224**	**No incidents reported**
Ysbyty Cwm Cynon	**5**	**1468**	**A - performance should be maintained**
Ysbyty Cwm Rhondda	**6**	**1020**	**A - performance should be maintained**
Ysbyty George Thomas	**5**	**385**	**B - 10% reduction in UwFS**
Subtotals	**223**	**18283**	

Hywel Dda University HB			
Amman Valley Hospital	**0**	**182**	**No incidents reported**
Bronglais General Hospital	**11**	**2850**	**A - performance should be maintained**

Canolfan Bro Cerwyn	**13**	**420**	**C - 40% reduction in UwFS**
Cardigan & District Memorial Hospital	**0**	**150**	**No incidents reported**
Glangwili General Hospital	**41**	**3097**	**B - 10% reduction in UwFS**
Hafan Derwen	**3**	**922**	**A - performance should be maintained**
Llandovery Hospital	**0**	**104**	**No incidents reported**
Prince Philip Hospital	**13**	**2482**	**A - performance should be maintained**
Prince Philip Hospital - Staff Residences	**4**	**315**	**B - 10% reduction in UwFS**
South Pembrokeshire Hospital	**0**	**310**	**No incidents reported**
Tregaron Hospital	**0**	**105**	**No incidents reported**
Withybush General Hospital	**30**	**3050**	**A - performance should be maintained**
Subtotals	**115**	**13987**	

Powys Teaching HB			
Brecon War Memorial Hospital	**1**	**727**	**A - performance should be maintained**
Broddyfi Community Hospital	**0**	**265**	**No incidents reported**
Bronllys Hospital	**1**	**862**	**A - performance should be maintained**
Knighton Hospital	**3**	**189**	**C - 40% reduction in UwFS**
Llandrindod Wells Hospital	**3**	**338**	**C - 40% reduction in UwFS**
Llanidloes & District Hospital	**0**	**183**	**No incidents reported**
Montgomery County Infirmary	**2**	**310**	**No incidents reported**
Victoria Memorial Hospital	**0**	**231**	**B - 10% reduction in UwFS**
Ystradgynlais Community Hospital	**1**	**343**	**C - 40% reduction in UwFS**
Subtotals	**11**	**3448**	

Swansea Bay University HB			
Cefn Coed Hospital	**8**	**1200**	**No incidents reported**
Cimla Hospital	**1**	**160**	**B - 10% reduction in UwFS**
Gorseinon Hospital & Bungalows	**0**	**114**	**No incidents reported**
Morriston Hospital	**43**	**6000**	**A - performance should be maintained**
Neath Port Talbot Hospital	**18**	**1900**	**B - 10% reduction in UwFS**
Singleton Hospital	**60**	**3491**	**B - 10% reduction in UwFS**
Tonna Hospital	**0**	**400**	**A - performance should be maintained**
Ty Garngoch	**0**	**0**	**No incidents reported**
Subtotals	**130**	**13265**	

Velindre NHS Trust			
Velindre Hospital	**3**	**1200**	**A - performance should be maintained**
Subtotals	**3**	**1200**	

Appendix E

WHTM 05-03H Categories of False Alarms

	Class	Task force definition	Examples
1	Malicious	Incident in which the fire alarm system has been activated as the result of the actions of a person who is aware that there is no fire.	Operation of a manual call point or tampering with an automatic detector with the intention of raising a fire alarm signal, knowing that there is no fire.
2	Good intent	Incident in which the fire alarm system has been activated by a person in the belief that there is a fire, when no fire actually exists.	Operation of a manual call point or tampering with an automatic detector with the intention of raising a fire alarm signal, knowing that there is no fire.
3	Accidental damage	Incident in which the fire alarm system has been activated as a result of accidental mechanical damage.	Accidental mechanical damage to an automatic detector, manual call point, extinguishing system component, wiring or control equipment; ingress of water to equipment.
4	Alarm activated by patient or public	Incident in which the fire alarm system has been activated as a result of the actions of a person who is not a member of staff when there is no fire.	Fire alarm break glass point or detector activated where the person has not intended to act maliciously.
5	Environmental effect Cooking fumes	Incident in which the system has responded to a fire-like phenomenon or environmental influence. (Other than those in 6 to 8)	Unwanted alarm as a result of detection of cooking.
6	Environmental effect Smoking	Incident in which the system has responded to a fire-like phenomenon or environmental influence (Other than those in 5, 7 and 8).	Unwanted alarm as a result of detection of smoke from smoking material.
7	Environmental effect Insects	Incident in which the system has responded to a fire-like phenomenon or environmental influence (Other than those in 5, 6 and 8).	Unwanted alarm as a result of detection of insects.
8	Environmental effect Other	Incident in which the system has responded to a fire-like phenomenon or environmental influence (Other than those in 5 to 7).	Unwanted alarm as a result of detection of environmental influences, other than those included in 5 to 7. This would include a fire outside the building, such as controlled burning which has activated a smoke detector.
9	System fault/design	Incident in which the system has produced a fire alarm signal as a result of an identifiable, diagnosed fault.	Circuit fault. Faulty detector. Unsuitable equipment or positioning.
10	System procedures not complied with	Incident which resulted in inappropriate response to incorrect action by a person (Other than malicious action or accidental damage to the system and/or those in 7).	Test of system without prior notification of an alarm-receiving centre. Not closing off detectors when undertaking construction, etc. Not using permit-to-work, e.g. hot working under detection.

11	Management procedures not complied with/ building not used correctly	Incident which resulted in inappropriate response to incorrect action by a person (Other than those in 6).	Incorrect building management such as leaving fire doors to kitchens wedged open, actuating adjacent smoke detectors.
12	Bomb alerts	Incident which resulted in inappropriate response to the fire alarm being activated in order to evacuate persons from the premises in the case of or bomb warning or hoax.	Fire alarm activated by building manager following receipt of a bomb alert in order to evacuate the building quickly. The fire alarm should not be used for this purpose. The attendance at the building of the fire service would put fire-fighters unnecessarily at risk.
13	Sprinkler alarm – water pressure	Alarm signal arising from fluctuation of pressure within the sprinkler installation.	Increase in pressure of a town's main, pressure surge on start of sprinkler pumps, or loss of pressure in system.
14	Sprinkler alarm – other known causes	Alarm signal arising from a sprinkler installation for a known reason other than damage or water pressure variation.	Increase in pressure of a town's main, pressure surge on start of sprinkler pumps, or loss of pressure in system.
15	Unknown	Alarm signal arising from a source that cannot be reliably identified.	Unwanted alarm as a result of detection for reasons others than those included.

Appendix F

Specific Cause of False Alarms
Fire & UwFS Database

- Aerosol spray - accidental
- Aerosol spray - malicious
- Alarm not isolated by Estates
- Contractor testing system
- Cooking - burnt toast
- Cooking - inappropriate locations
- Cooking - unattended
- Detector activated through water ingress
- Detector contaminated
- Detector faulty/damaged
- Detector knocked - cleaning process
- Detector type inappropriate for location
- Dust - contractors work (drilling/grinding etc)
- Dust/fumes - cleaning processes
- Excessive build-up of heat
- Faulty alarm panel
- Fumes - contractors hot work
- MCP activated by confused patient
- MCP activated by unknown person
- MCP activated maliciously
- MCP broken by accidental impact
- MCP broken in error
- MCP good intent activation
- Smoke from candles
- Smoke/fumes from external source
- Steam from mechanical plant
- Steam from showers/bath
- Other