

W3. Contaminants

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University of Central Lancashire

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Service



Fire Contaminants

Presented by:

Prof Anna A Stec

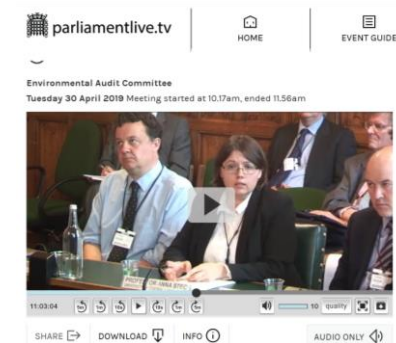
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University of Central Lancashire, UK

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A little bit about me.....

- Professor in Fire Chemistry and Toxicity at University of Central Lancashire
- **Specialist** on the **International Agency for Research on Cancer Monographs**, Volume 132 – ‘Occupational exposure as a Firefighter’, World Health Organization
- **Member** on the National Academies of Sciences, Engineering and Medicine, “The Chemistry of Urban Wildfires”, USA
- **Grenfell Inquiry Scientific Expert:** to determine the fire derived toxicants and related deposits present in the Tower and their origins
- **Judith Hackitt** Independent Review of Building Regulations and Fire Safety: Working group 6
- **Expert Witness on Environmental Audit Committee**, Toxic Chemicals in Everyday Life, House of Commons, UK Parliament
- **UK’s designated principal expert** on Fire Chemistry to the ISO Fire Threat to People and the Environment subcommittee (ISO/TC92/SC3)
- **European Parliament**, MEPs Against Cancer (MAC), European Parliament Interest Group: Addressing the rate of cancers amongst firefighters



Firefighting is carcinogenic

- Widespread use of plastics increases growth and severity of fires.
- Modern materials (plastics etc.) also produce higher concentrations of toxicants.
- Fire smoke is the biggest killer in fires, yet outside mass transport, it is completely unregulated



Building Regulations



Working Group 6: Materials, Products, and System Testing Recommendation

Undertake a review of relevant and appropriate standards related to the health and safety of people in and around buildings to ensure that they remain appropriate to known real world hazards and construction technologies, materials

HM Government

The Building Regulations 2010

Fire safety

B

APPROVED DOCUMENT

Volume 1: Dwellings

Requirement B1: Means of warning and escape
Requirement B2: Internal fire spread (linings)
Requirement B3: Internal fire spread (structure)
Requirement B4: External fire spread
Requirement B5: Access and facilities for the fire service
Regulations: 6(3), 7(2) and 38

2019 edition incorporating 2020 and 2022 amendments – for use in England

Requirement

Requirement

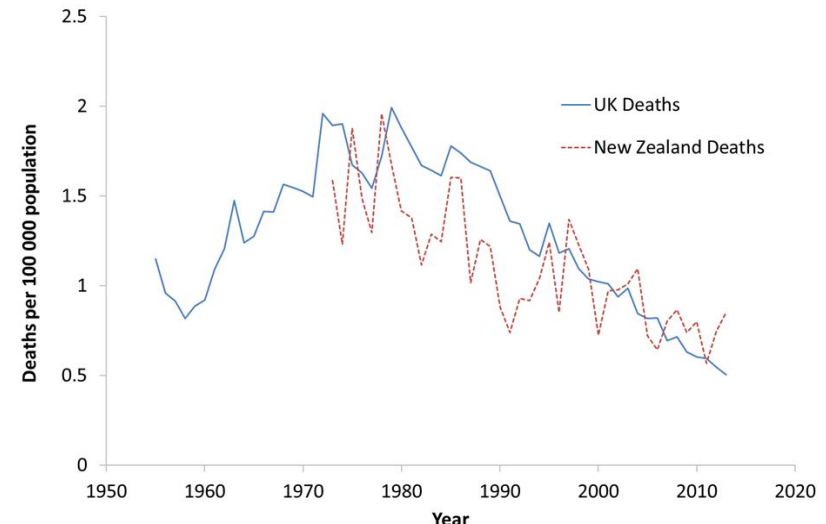
Means of warning and escape

B1. The building shall be designed and constructed so that there are appropriate provisions for the early warning of fire, and appropriate means of escape in case of fire from the building to a place of safety outside the building capable of being safely and effectively used at all material times.

Gas Phase Halogenated Flame Retardants

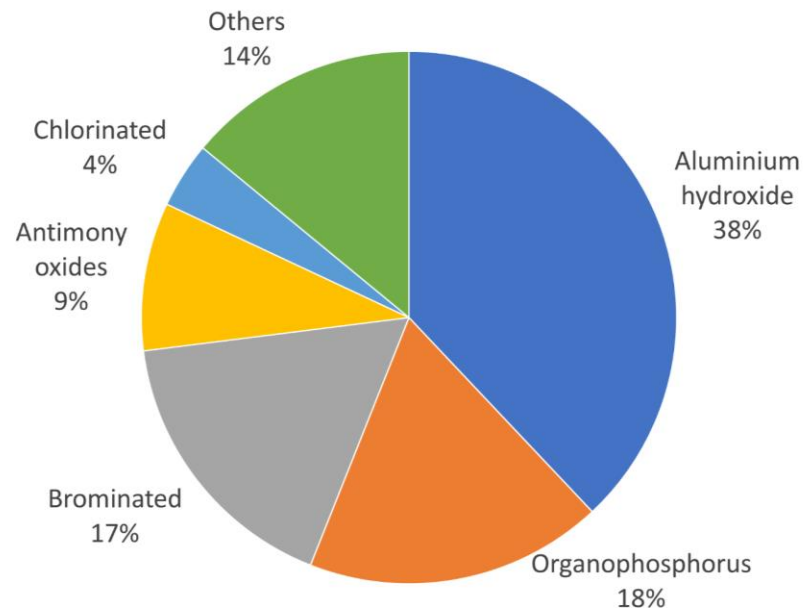
- Man-made chemicals,
- Persistent, bioaccumulative and toxic (PBT),
- Tend to leach out of polymer during use,
- Hinder or prevent meaningful end-of-life processing
- Added to a flammable plastics, FRs suppress ignition, but don't prevent burning.
- Fire retardants which act in the gas phase often increase fire effluent toxicity.

Comparison with New Zealand
(NZ has **no** furniture flammability regulations)

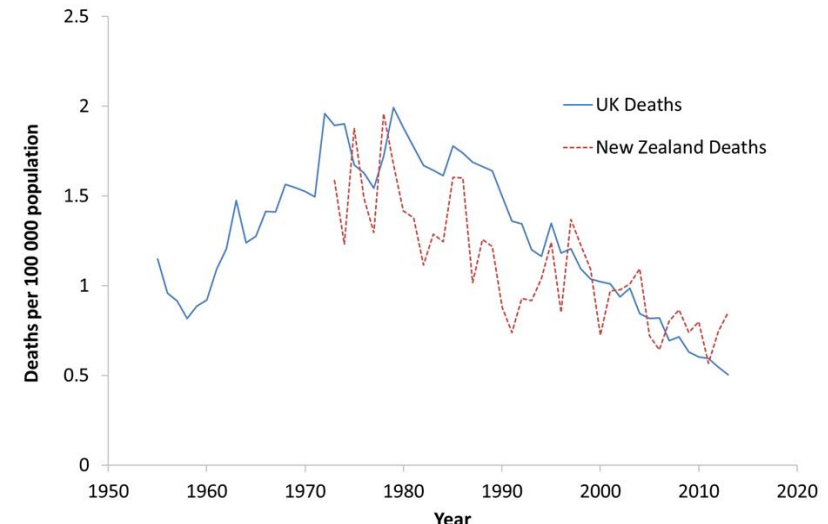


Gas Phase Halogenated Flame Retardants

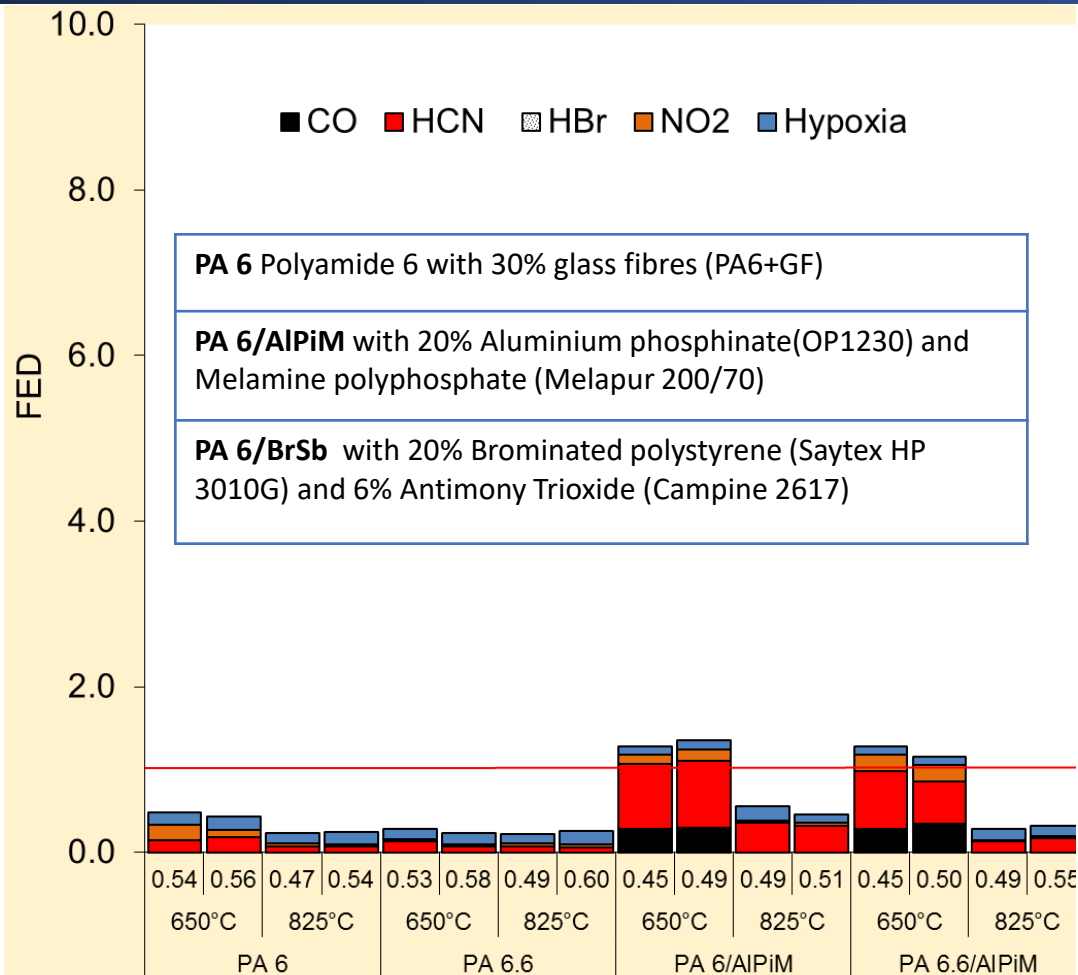
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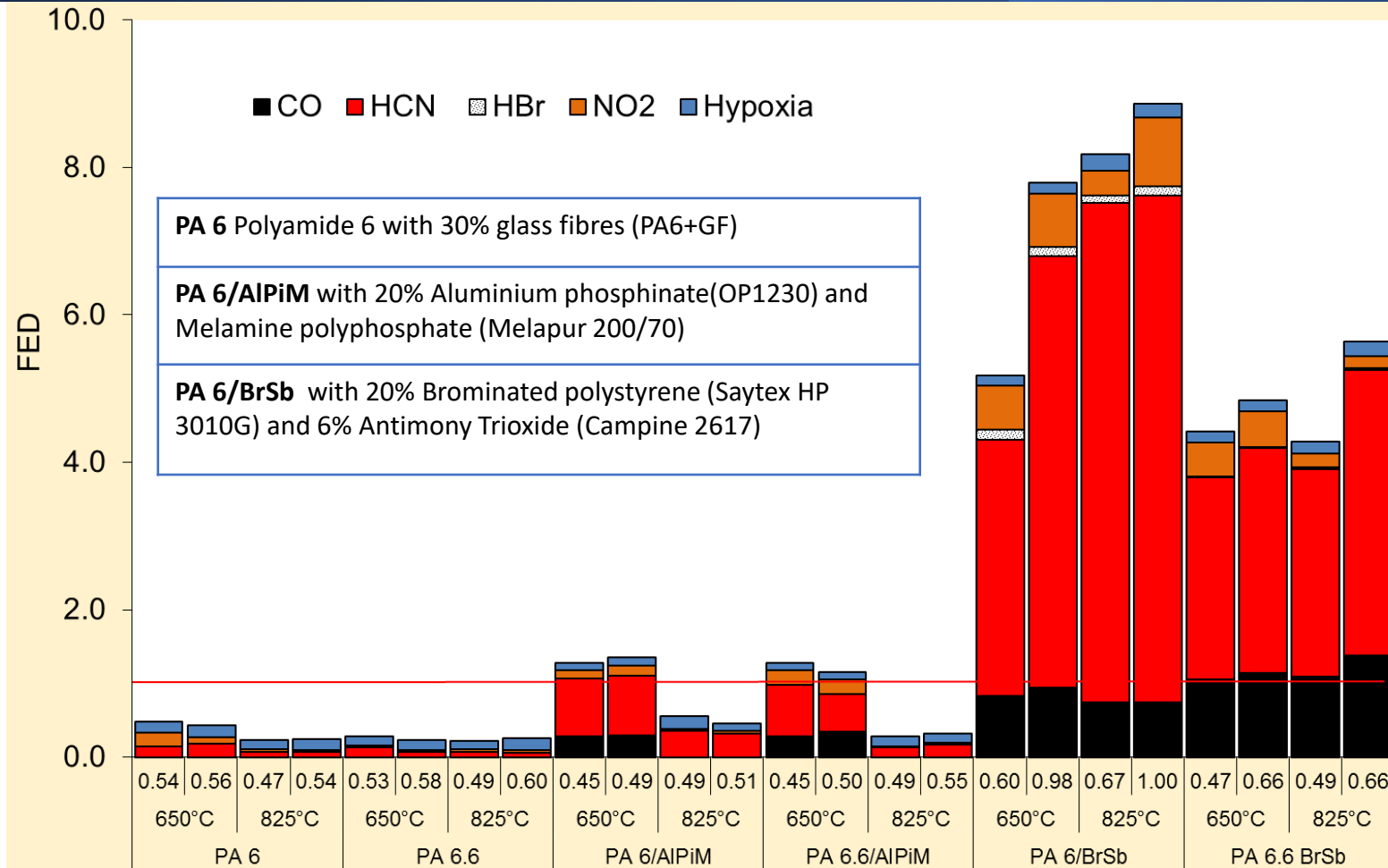
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Fire Toxicity FR polyamides



Fire Toxicity FR polyamides



Poly- and per-fluoroalkyl substances



INTERNATIONAL ASSOCIATION OF FIRE FIGHTERS

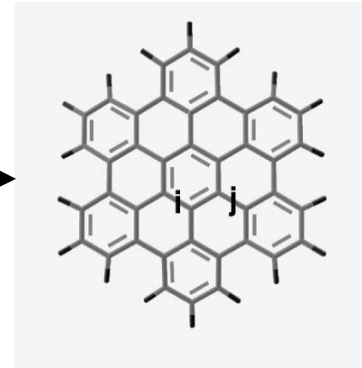
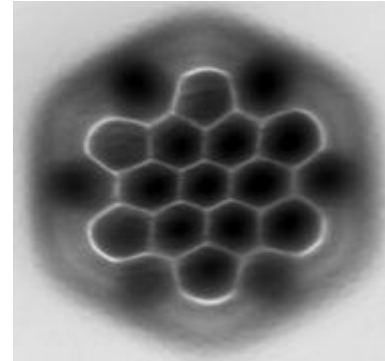
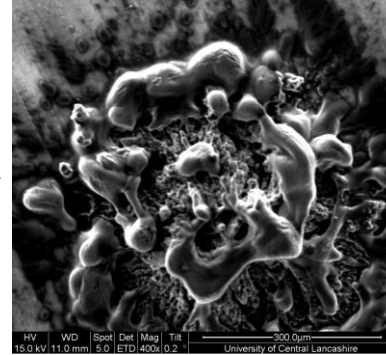


Firefighters' Working Conditions: Contaminants

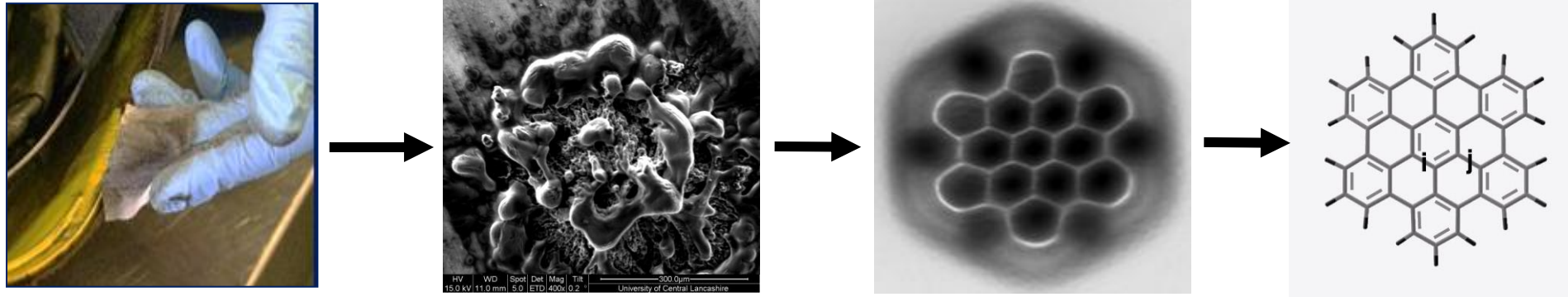
- Depend upon:
 - 1. **Chemical composition of material** (fuel type)
 - C, N, Cl, Br, S, (Fire Retardants)
 - Organic composition (Aliphatic or aromatic)
 - 2. **Ventilation (fire scenarios/conditions)**
 - Flaming/non-flaming, ventilation, temperature


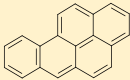


Firefighters Exposures

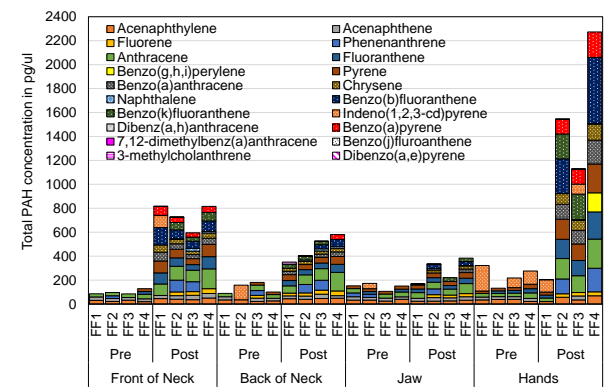
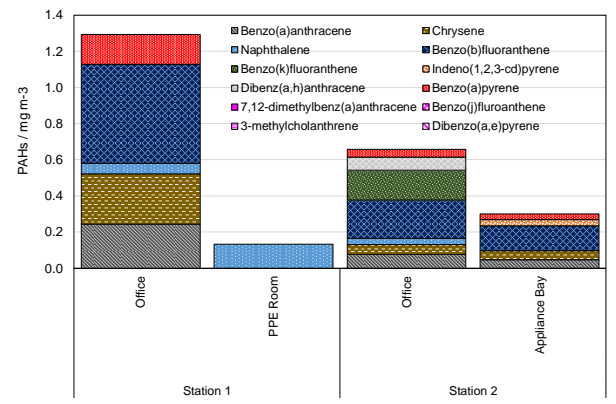
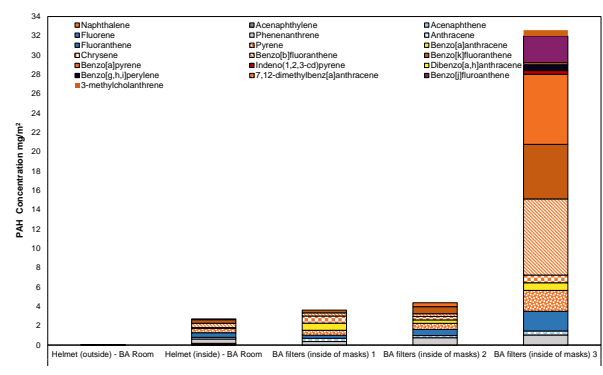
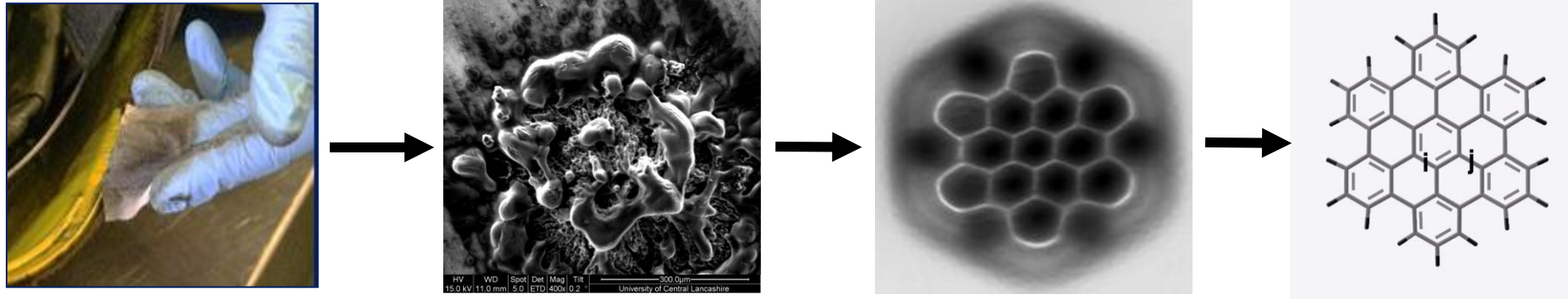


Firefighters Exposures

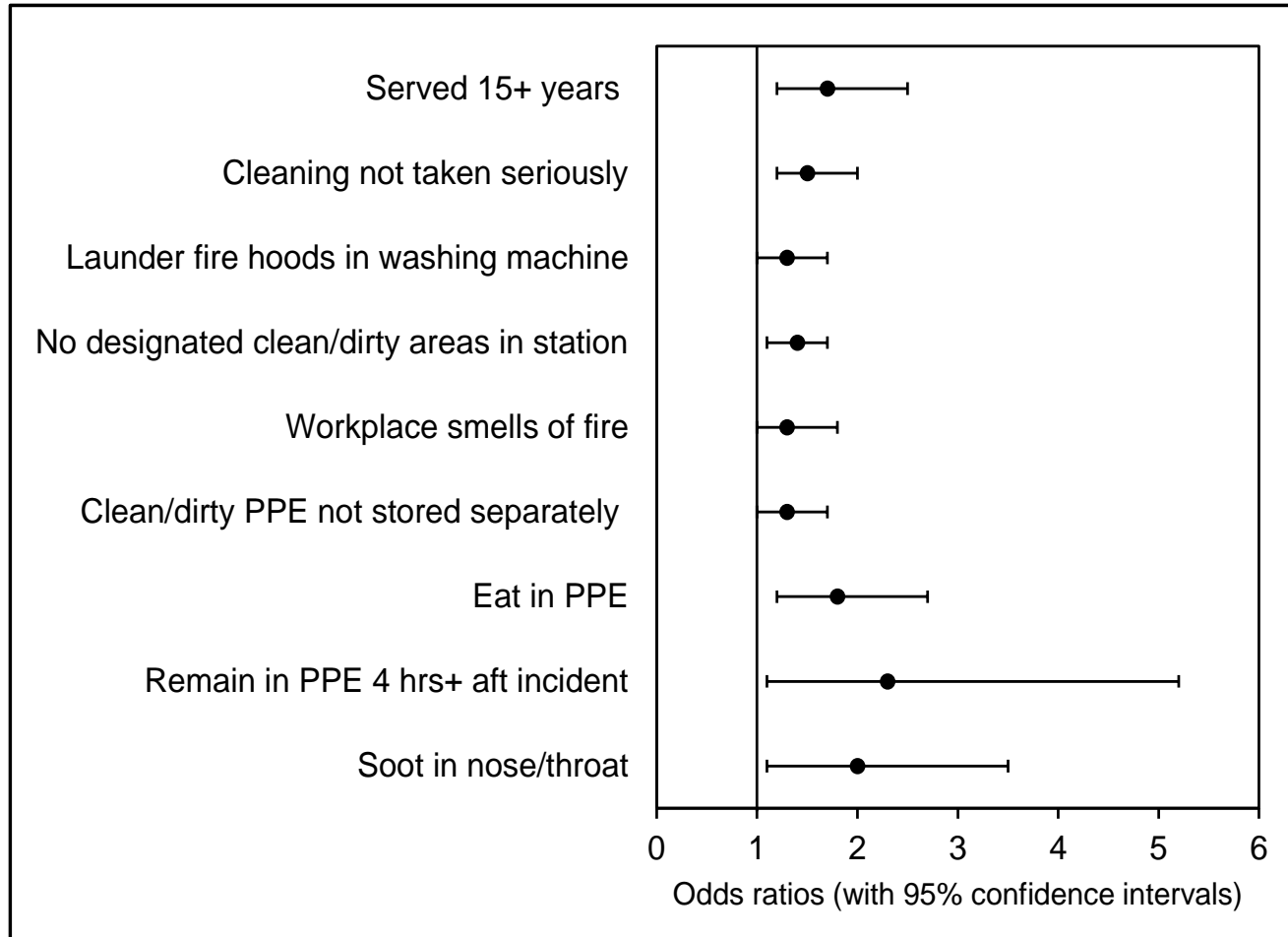


	CHEMICAL STRUCTURE	IARC	HEALTH OUTCOME
Benzene		1- Carcinogenic	acute myeloid leukemia multiple myeloma, non-Hodgkin lymphoma
PAHs: Benzo[a]pyrene		1- Carcinogenic	Skin, respiratory and digestive system, (oesophagus, bladder)

Firefighters Exposures




Contaminant exposure and increased likelihood of cancer diagnosis



The UK Firefighter Contamination Survey

Minimising firefighters' exposure to toxic fire effluents

Interim Best Practice Report

An independent report by  with a foreword by FBU General Secretary Matt Wrack

Commissioned by 



Minimiziranje izloženosti vatrogasaca
otrovnim efluentima

Minimalizacja narażenia strażaków na toksyczne produkty pożarowe Okresowy Raport Najlepszych Praktyk

Niezależny raport autorstwa  z przedmową Sekretarza Generalnego FBU Matta Wracka

Na zlecenie 



Warszawa, 30 marca 2021 r.

BK-III-07542-3/21

ww rozdzielnika

Mając na uwadze trwający proces nowelizacji rozporządzenia Ministra Spraw Wewnętrznych i Administracji w sprawie szczegółowych warunków bezpieczeństwa i higieny służby strażaków Państwowej Straży Pożarnej, informuję co następuje.
Przedmiotowa nowelizacja wprowadzi w obiektach jednostek ratowniczo-gaśniczych Państwowej Straży Pożarnej obowiązek wyznaczenia strefy czystej i brudnej stanowiącej układ pomieszczeń zapewniający właściwe umycie, dezynfekcję, pranie odzieży i wyposażenia, a następnie ponowne umundurowanie i wyposażenie strażaka. Jest to od dawna wyczekiwane wprowadzenie w życie jednego z elementów profilaktyki nowotworowej wśród strażaków. Ogłoszenie nowelizacji ww. rozporządzenia jest planowane na bieżący rok, natomiast wymagania, o których mowa w istniejących już obiektach przeznaczonych dla jednostek ratowniczo-gaśniczych Państwowej Straży Pożarnej wprowadza się do dnia 1 stycznia 2023 r.
W związku z powyższym proszę uwzględnić te bardzo istotne zapływy służące poprawie warunków służby strażaków i sukcesywnie dostosowywać obiekty poprzez dokonanie wymaganych zmian organizacyjnych, modernizacyjnych i planowania budżetowego.


Andrzej BARTKOWIAK

Për minimizimin e ekzpozimit të
zjarrfikësve ndaj rrjedhjeve toksike
gjatë shuarjes së zjarrit

Minimiziranje izloženosti vatrogasaca
otrovnim efluentima

Minimizar a exposição dos bombeiros aos agentes tóxicos provocados pelos incêndios

Relatório de boas práticas

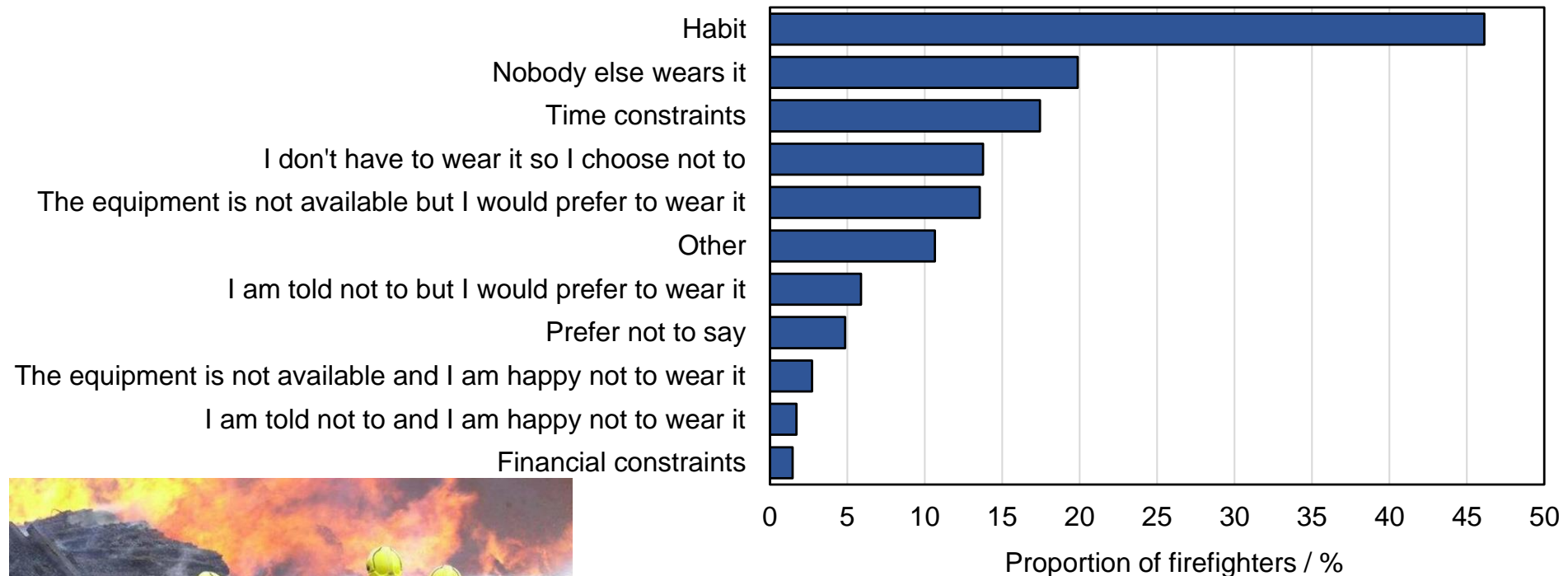
Um relatório independente apresentado por UCLAN com prefácio
do Secretário Geral de FBU, Matt Wrack

Minimalizace expozice hasičů
toxickým zplodinám hoření

Safety Standards and Regulations

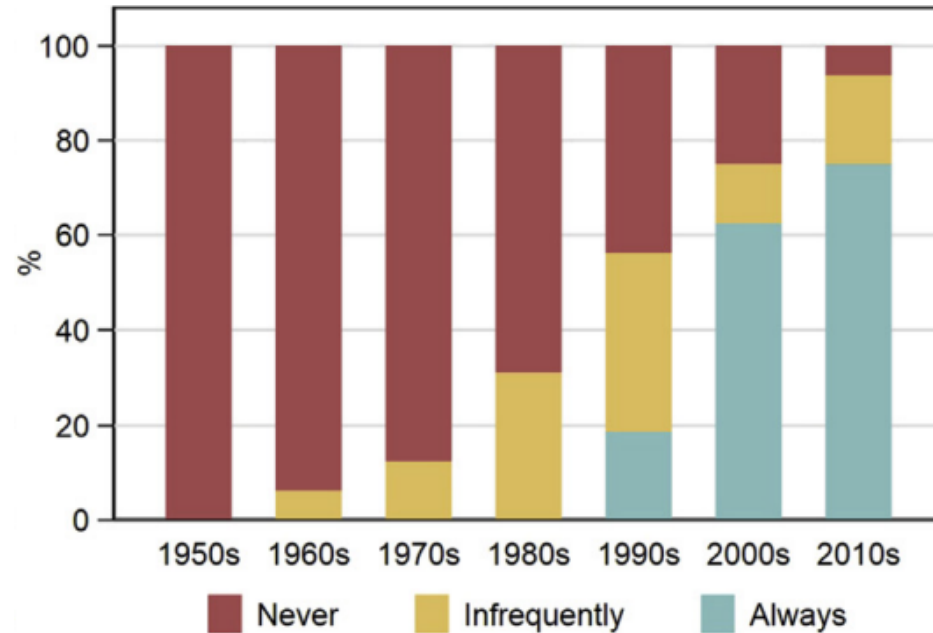


84% firefighters often/sometimes attend fires without RPE

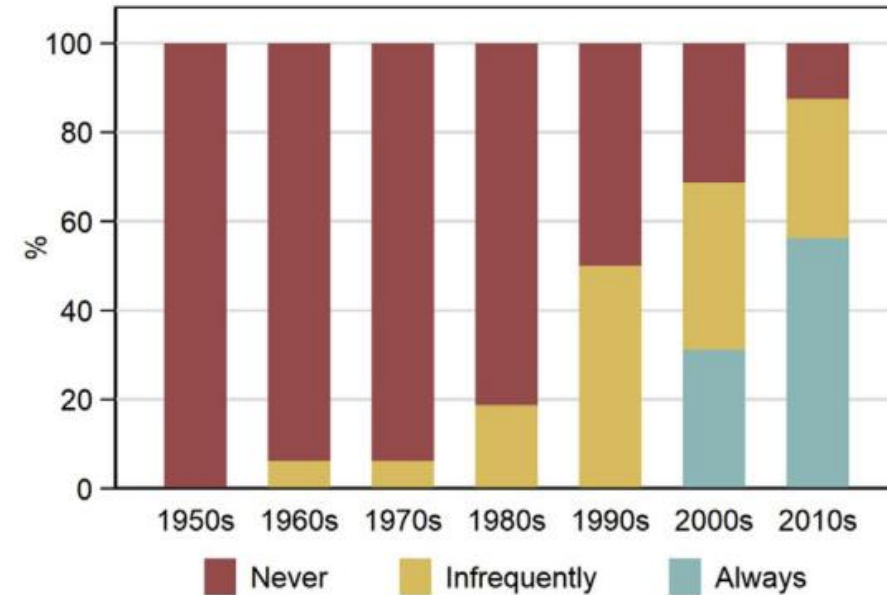


Work Conditions and Practices in Norwegian Fire Departments: A Survey on Factors Potentially Influencing Carcinogen Exposure

The Norwegian Directorate for Civil Protection, Guidance on smoke and chemical diving, Published April 1994, last updated November 2005

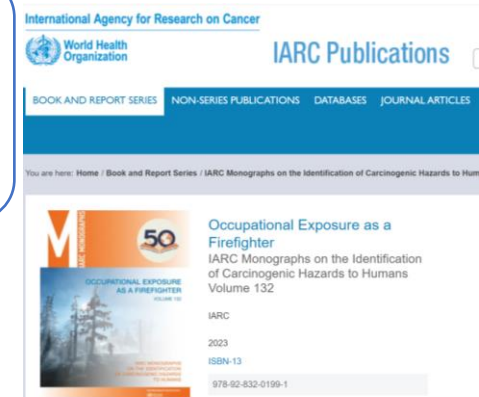
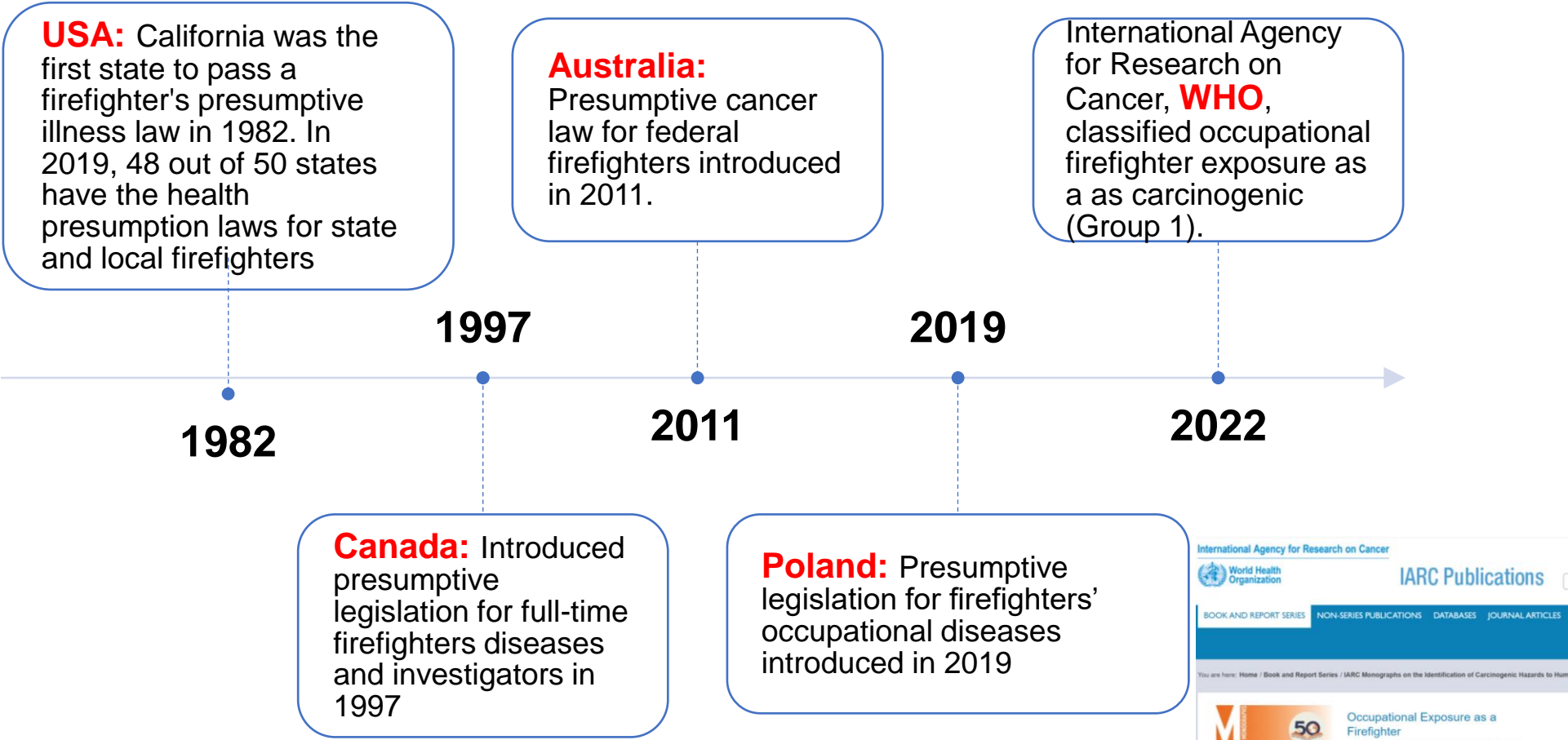
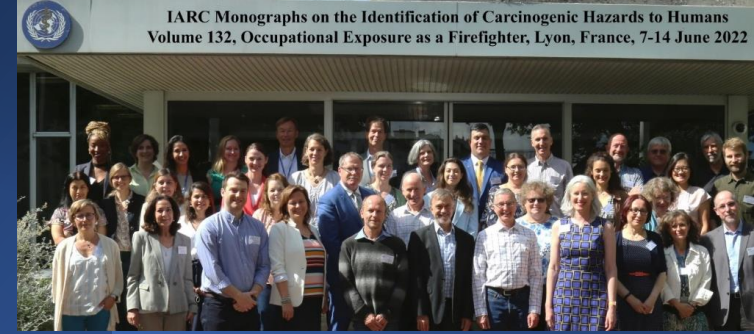


The type of SCBA used during knockdown of fires from outside of buildings



Use of SCBAs during overhaul

Firefighters Occupational Cancers and Diseases



Protecting firefighters from fire toxins



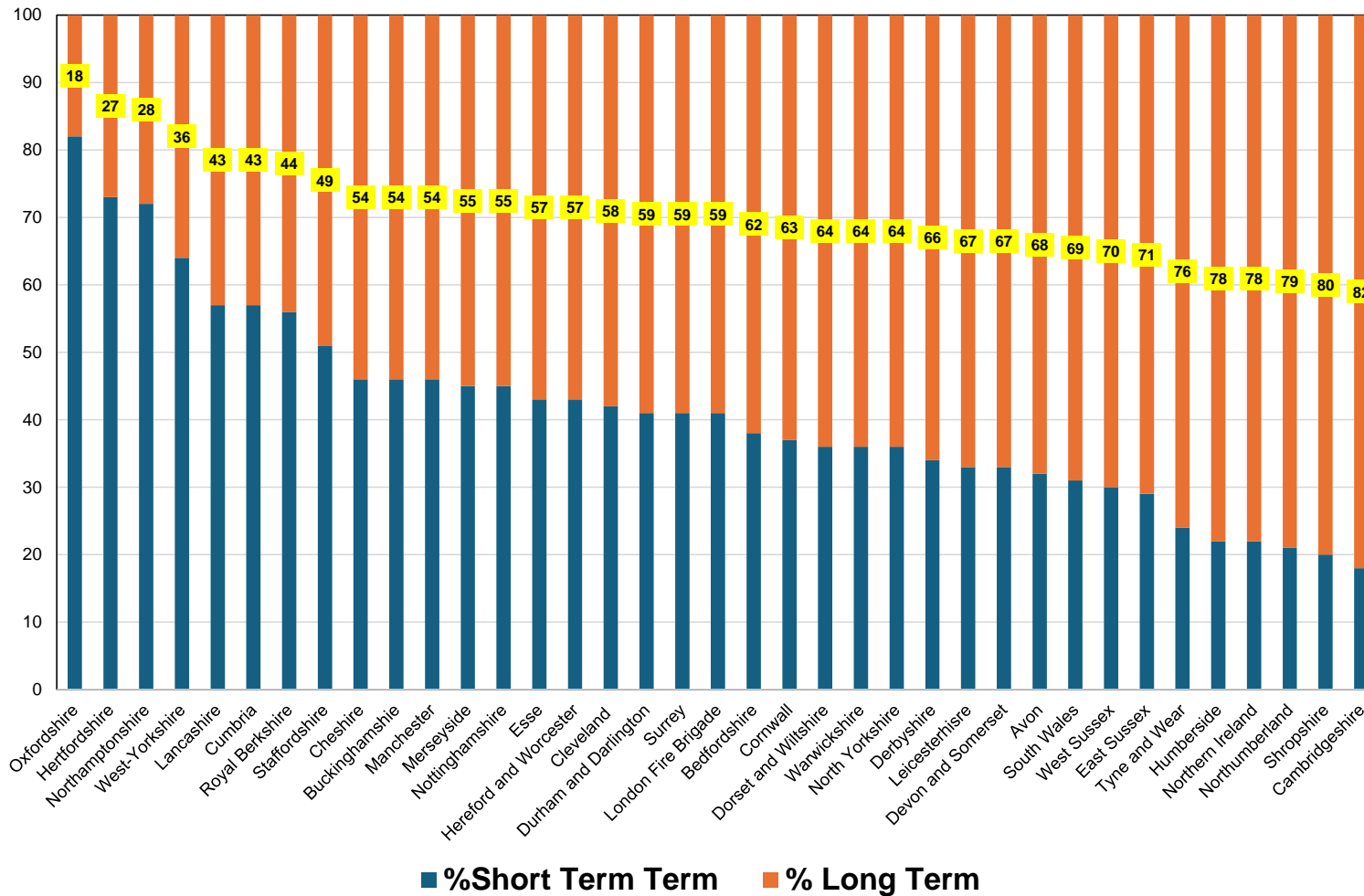
- **Oct 2023- Directive EU) 2023/2668** (protection of workers from the risks related to exposure to asbestos at work)

gives a mandate to the European Commission to develop guidelines and mandatory decontamination for every firefighter within two years (when exposed to asbestos).

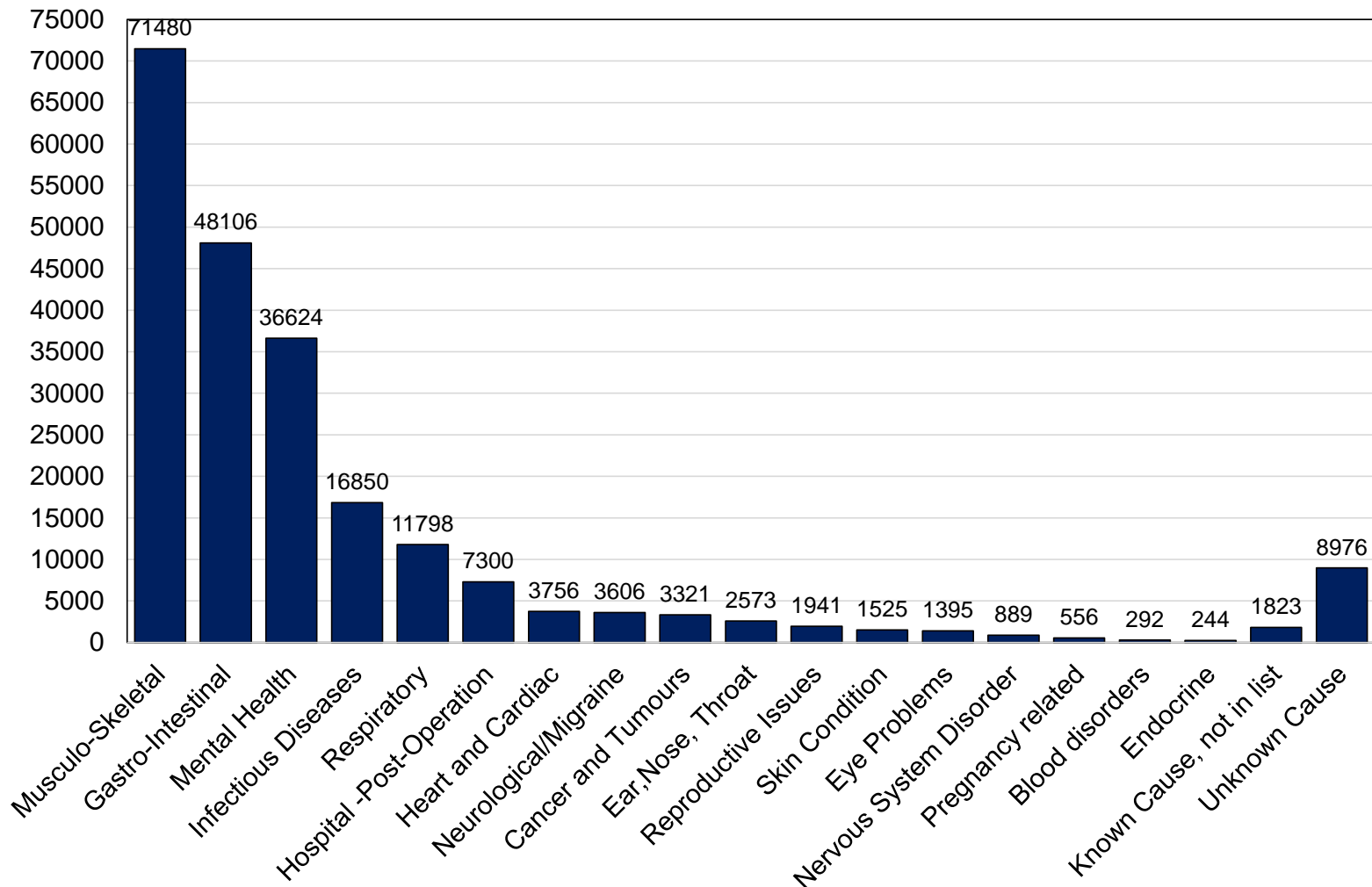
- **Feb 24 - Directive 2004/37/EC (carcinogens, mutagens or reprotoxic substances at work)**

....The World Health Organization has classified the occupational exposure of firefighters as carcinogenic.... It is therefore important that the employers of firefighters and emergency services personnel assess, in accordance with Directive 2004/37/EC, the risk of exposure to carcinogens, mutagens and reprotoxic substances and that they take the necessary measures to protect the health and safety of those workers.

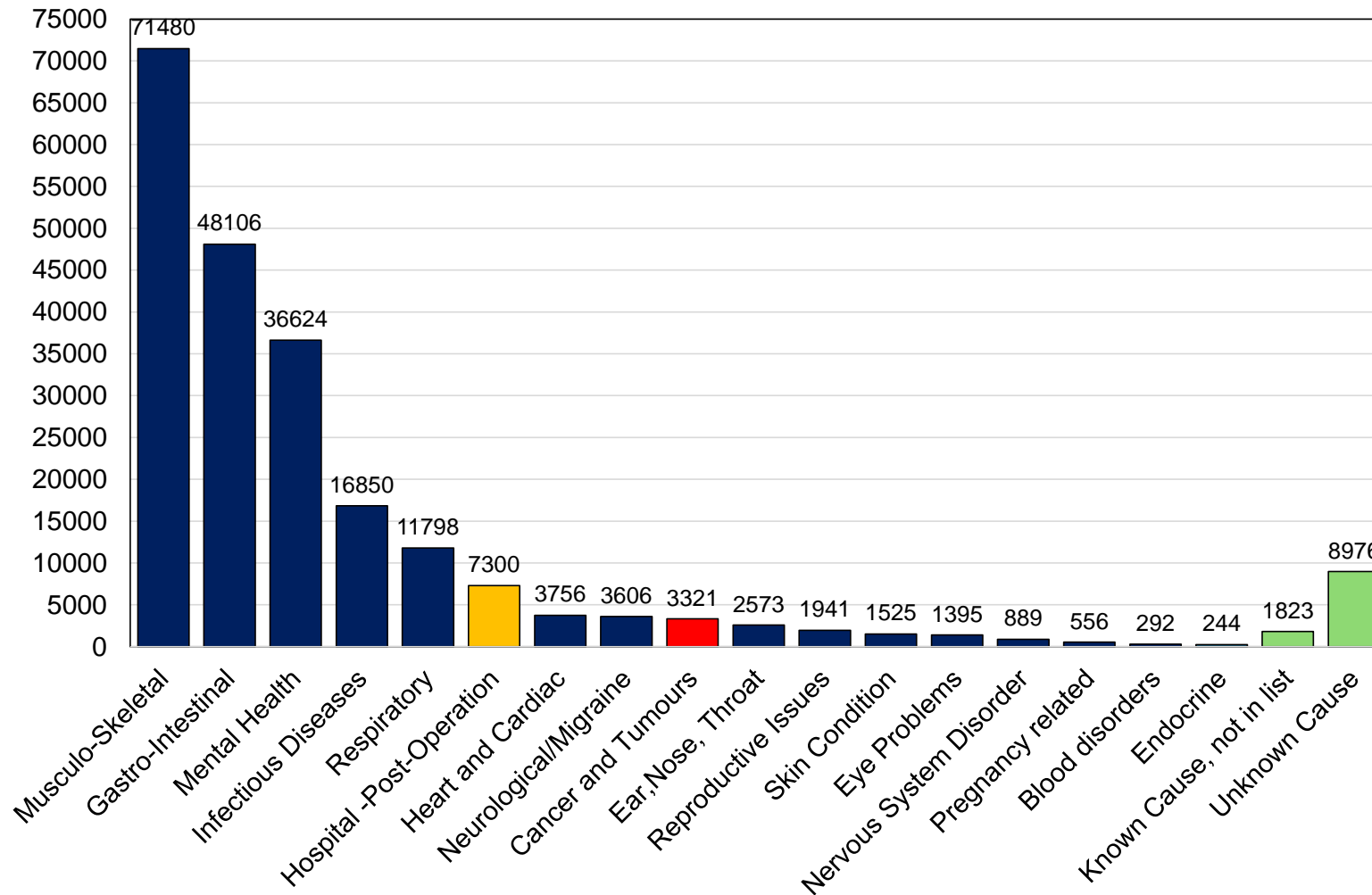
Short- and Long-Term Sickness Leaves



Cause of Sickness Absence – Wholetime Staff (Excluding Scotland)

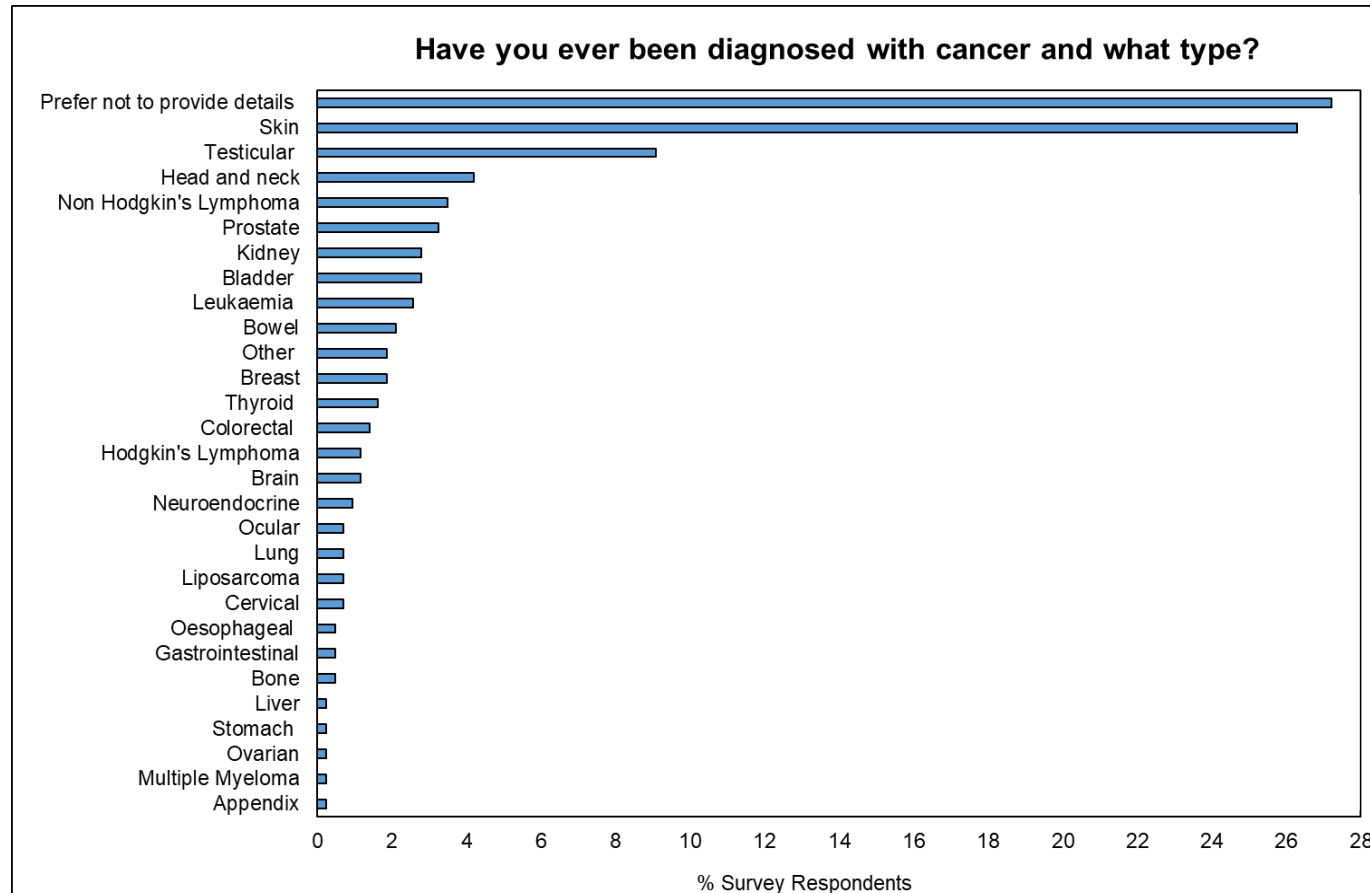


Cause of Sickness Absence – Wholetime Staff (Excluding Scotland)



Cancer Incidence-Survey Results

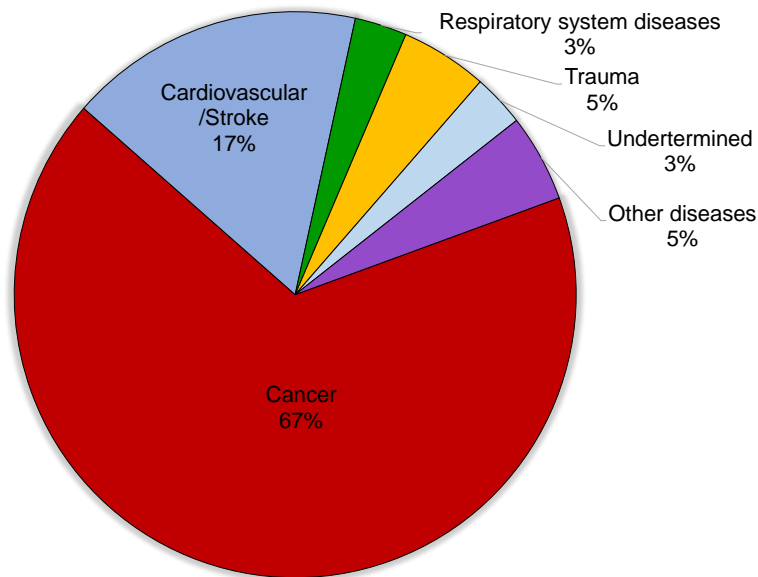
Over 4% of UK serving firefighters who responded to the survey have already been diagnosed with cancer.



Scottish male firefighter deaths for 2000-2020.

USA

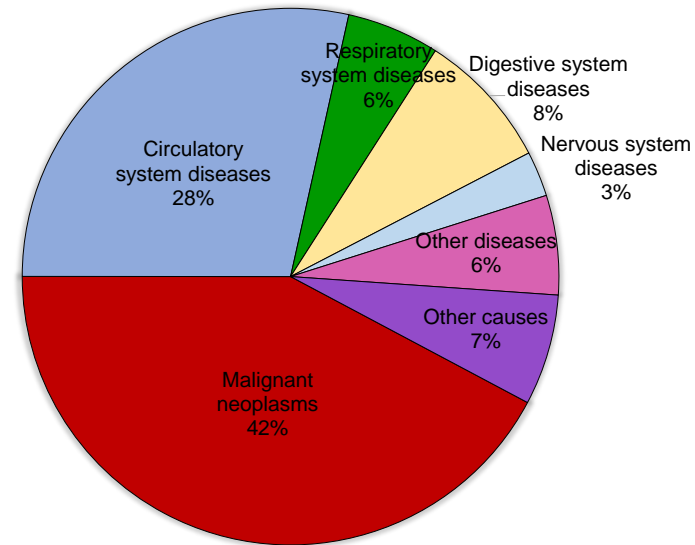
Line of Duty Firefighters Deaths
2002-2020



International Association of Firefighters,
<https://www.iaff.org/> 2023

UK

Scottish Male Firefighter Deaths
2000-2020



Stec et al., Scottish Firefighters Occupational Cancer
and Disease Mortality Rates: 2000-2020, Occupational
Medicine, 2023

Firefighters Cancer Mortality Rates

Country	Scotland
Study dates	2000-2020
Oesophageal cancer	2.42 (1.69-3.29)
Stomach cancer	1.30 (0.59-2.29)
Rectal cancer	0.74 (0.29-1.38)
Liver cancer	1.67 (0.83-2.80)
Pancreatic cancer	1.58 (0.86- 2.51)
Lung cancer	1.19 (0.90-1.52)
Skin cancer	1.17 (0.37-2.42)
Prostate cancer	3.80 (2.56-5.29)
Bladder cancer	2.09 (0.89-3.80)
Kidney cancer	1.84 (0.91-3.08)
Mesothelioma	2.14 (0.68-4.43)
Leukaemia	3.17 (1.44-5.58)
All cancers	1.61 (1.42-1.81)

Firefighters Cancer Mortality Rates

Country	Scotland	USA	Canada	Norwegian	France	Spain	Denmark	Sweden
Study dates	2000-2020	1950-2009	1950-1989	1960-2018	1979-2008	2001-2011	1970-2014	1979-1985
Oesophageal cancer	2.42 (1.69-3.29)	1.31 (1.10-1.55)	0.4 (0.05 - 1.43)	1.81 (0.99-3.04)	0.93 (0.67 - 1.27)	1.11 (0.64-1.92)		
Stomach cancer	1.30 (0.59-2.29)	1.06 (0.88-1.27)	0.51 (0.20 - 1.05)	1.26 (0.85-1.80)	1.15 (0.77 - 1.65)	1.32 (0.88-1.98)	1.96 (1.22-3.16)	1.21 (0.62- 2.11)
Rectal cancer	0.74 (0.29-1.38)	1.32 (1.07-1.61)	1.71 (0.91-2.93)	1.25 (0.78-1.92)	1.36 (0.86 - 2.04)	1.08 (0.57-2.04)	1.04 (0.58-1.83)	2.07 (0.89-4.08)
Liver cancer	1.67 (0.83-2.80)		0.84 (0.1 - 3.05)	2.79 (1.02-6.08)	1.10 (0.80 - 1.46)	1.01 (0.59-1.74)		1.49 (0.41-3.81)
Pancreatic cancer	1.58 (0.86- 2.51)		1.40 (0.77-2.35)	1.06 (0.66-1.62)	1.27 (0.92 - 1.72)	0.43 (0.21-0.88)		
Lung cancer	1.19 (0.90-1.52)	1.08 (1.02-1.15)	0.95 (0.71-1.24)	0.92 (0.71-1.17)	0.86 (0.74 - 0.99)	0.94 (0.77-1.15)		1.63 (0.75-3.10)
Skin cancer	1.17 (0.37-2.42)	1.05 (0.83-1.31)	0.73 (0.09 - 2.63)	1.43 (0.76-2.45)	0.65 (0.21 - 1.51)	0.63 (0.19-2.10)		
Prostate cancer	3.80 (2.56-5.29)	1.08 (0.97-1.20)	1.32 (0.76 - 2.15)	1.01 (0.76-1.31)	0.54 (0.31 - 0.86)	1.26 (0.67-2.36)	1.89 (1.22-2.93)	
Bladder cancer	2.09 (0.89-3.80)	0.98 (0.80-1.18)	3.16 (0.86-8.08) 1.28 (0.51-2.63)	2.33 (0.76-5.43)	0.73 (0.41 - 1.21)	0.62 (0.32-1.17)		
Kidney cancer	1.84 (0.91-3.08)	1.57 (1.22-2.00)	4.14 (1.66-8.53)	1.07 (0.55-1.87)	0.63 (0.30 - 1.16)	1.18 (0.57-2.44)		
Mesothelioma	2.14 (0.68-4.43)	1.86 (1.10-2.94)		2.77 (0.90-6.47)		0.62 (0.09-4.42)		
Leukaemia	3.17 (1.44-5.58)	2.39 (0.91-7.37)	1.90 (0.52-4.88)	1.11 (0.57-1.94)		0.90 (0.40-2.01)		
All cancers	1.61 (1.42-1.81)	1.12 (1.08-1.16)	1.05 (0.91-1.20)	1.08 (0.98-1.20)	0.95 (0.88-1.02)	1.00 (0.89-1.12)	1.12 (1.00-1.26)	0.96 (0.50-1.67)

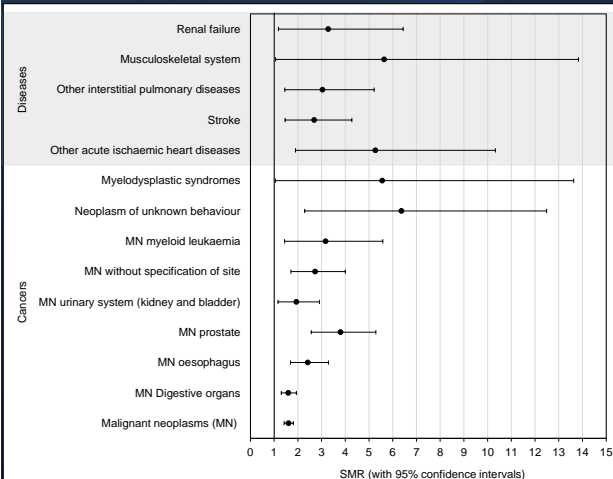
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Stomach cancer	1.30 (0.59-2.29)	1.06 (0.88-1.27)	0.51 (0.20 - 1.05)	1.26 (0.85-1.80)	1.15 (0.77 - 1.65)	1.32 (0.88-1.98)	1.96 (1.22-3.16)	1.21 (0.62- 2.11)
Rectal cancer	0.74 (0.29-1.38)	1.32 (1.07-1.61)	1.71 (0.91-2.93)	1.25 (0.78-1.92)	1.36 (0.86 - 2.04)	1.08 (0.57-2.04)	1.04 (0.58-1.83)	2.07 (0.89-4.08)
Liver cancer	1.67 (0.83-2.80)		0.84 (0.1 - 3.05)	2.79 (1.02-6.08)	1.10 (0.80 - 1.46)	1.01 (0.59-1.74)		1.49 (0.41-3.81)
Pancreatic cancer	1.58 (0.86- 2.51)		1.40 (0.77-2.35)	1.06 (0.66-1.62)	1.27 (0.92 - 1.72)	0.43 (0.21-0.88)		
Lung cancer	1.19 (0.90-1.52)	1.08 (1.02-1.15)	0.95 (0.71-1.24)	0.92 (0.71-1.17)	0.86 (0.74 - 0.99)	0.94 (0.77-1.15)		1.63 (0.75-3.10)
Skin cancer	1.17 (0.37-2.42)	1.05 (0.83-1.31)	0.73 (0.09 - 2.63)	1.43 (0.76-2.45)	0.65 (0.21 - 1.51)	0.63 (0.19-2.10)		
Prostate cancer	3.80 (2.56-5.29)	1.08 (0.97-1.20)	1.32 (0.76 - 2.15)	1.01 (0.76-1.31)	0.54 (0.31 - 0.86)	1.26 (0.67-2.36)	1.89 (1.22-2.93)	
Bladder cancer	2.09 (0.89-3.80)	0.98 (0.80-1.18)	3.16 (0.86-8.08) 1.28 (0.51-2.63)	2.33 (0.76-5.43)	0.73 (0.41 - 1.21)	0.62 (0.32-1.17)		
Kidney cancer	1.84 (0.91-3.08)	1.57 (1.22-2.00)	4.14 (1.66-8.53)	1.07 (0.55-1.87)	0.63 (0.30 - 1.16)	1.18 (0.57-2.44)		
Mesothelioma	2.14 (0.68-4.43)	1.86 (1.10-2.94)		2.77 (0.90-6.47)		0.62 (0.09-4.42)		
Leukaemia	3.17 (1.44-5.58)	2.39 (0.91-7.37)	1.90 (0.52-4.88)	1.11 (0.57-1.94)		0.90 (0.40-2.01)		

Scottish male firefighter deaths for 2000-2020

Results revealed that:

- Scottish firefighters die from cancers at a younger age: 45-49 compared to the general population (65-69 years old)
- Significant **overall** excess cancer mortality was found for Scottish firefighters compared to the general population (SMR 1.61x higher).
- Excess **cancer** mortality was found for:
 - prostate (3.80x higher);
 - myeloid leukaemia (3.17x higher);
 - oesophagus (2.42x higher)
 - urinary system (kidney and bladder) (1.94x higher).
 - unknown behaviour (6.37x higher).
- Significantly higher mortality was found for **diseases**:
 - acute ischaemic heart diseases (5.27x higher);
 - stroke (2.69 x higher);
 - pulmonary diseases (3.04x higher),
 - renal failure (3.28x higher) and
 - musculoskeletal system diseases (5.64x higher)



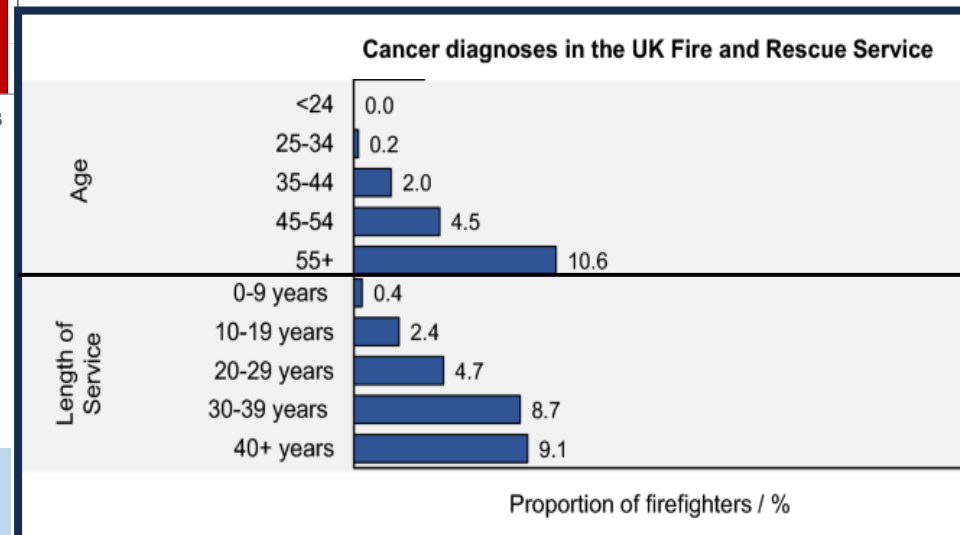
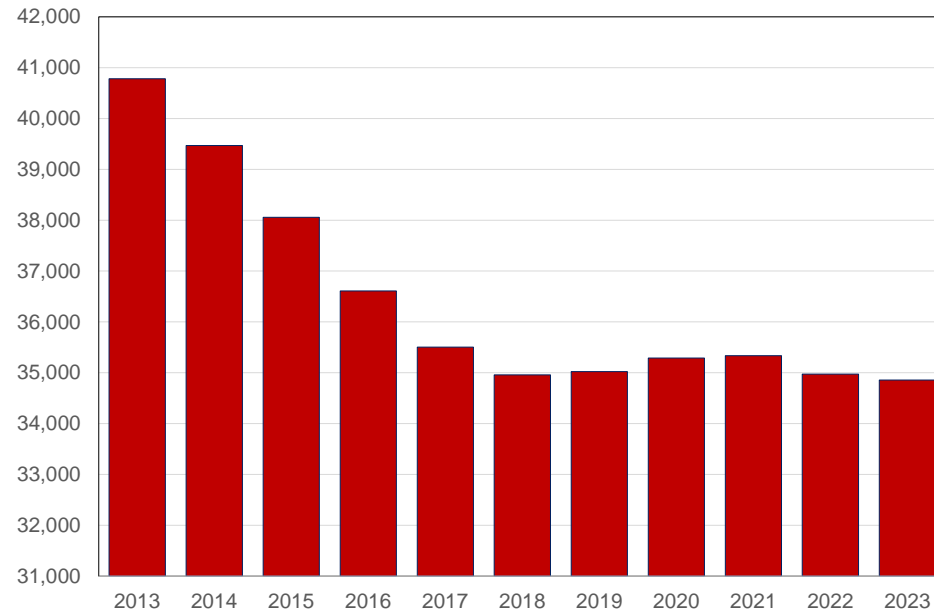
Scottish male firefighter deaths for 2000-2020

- Firefighters get these cancers earlier in life.
- Multiple exposures and routes of exposure cause likely more than one type of cancer.
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- Multiple exposures and routes of exposure cause likely more than one type of cancer.

	Peak Mortality Age	
	Scottish Firefighters	Scottish Population
Cancer of Unknown origin	60-64	75-79
Bladder	70-74	85-89
Oesophageal	60-64	75-79
Kidney	55-59	80-84
Leukaemia	65-69	85-89
Mesothelioma	60-64	85-89
Multiple myeloma	65-69	85-89
Cardiac Arrest	60-64	80-84

Workforce and Staffing

Total Firefighters Headcount



FIREFIGHTERS OCCUPATIONAL CANCER



12 000 entries
800 cancers
650 diseases

www.uclan.ac.uk/FCDR

Currently

- Developing preventive health monitoring for the firefighters.

This is done by:

- Firefighters Cancer and Disease Registry
- Clinical markers for number of firefighters cancers and diseases
- Targeted and non-targeted analysis for fire effluents and their metabolites



Firefighters' Most Common Cancers

Cancers	Age (Diagnosis)	Currently have cancer	Stage	Metastasize ?	In Remission	Received Treatment	Treatment type	Treatment length (Years)	Time between diagnosis and treatment (weeks)
Prostate	60	56%	2	21%	41%	79%	40% Surgery 13% Chemotherapy 27% Radiotherapy	4	14
Skin (Non Melanoma)	55	33%	1	7%	40%	88%	71% Surgery 20% Chemotherapy 15% Radiotherapy	5	11
Lymphoma	51	46%	4	18%	59%	84%	20% Surgery 68% Chemotherapy 30% Radiotherapy	2	9
Melanoma	53	22%	2	7%	42%	87%	71% Surgery 11% Chemotherapy 16% Radiotherapy	6	5
Bladder	59	41%	2	9%	63%	89%	74% Surgery 43% Chemotherapy 2% Radiotherapy	5	6

Conclusions

Firefighters deserve the best preventative medical care, education, and support to reduce the risk of cancer.

- Better decontamination policies needed for contaminants
- Preventative health monitoring
- Better data collection on firefighters' cancer and other disease incidence

**Percival Pott: First to demonstrate scrotal cancer caused by soot
First preventative Legislation!**



www.nature.com/scientificreports

scientific reports

OPEN **Culture and awareness of occupational health risks amongst UK firefighters**

Taylor A. M. Wolfe¹, Louis Turrell^{1,2}, Andrew Robinson^{1,2}, Kathryn Dickens¹, Anna Clinton¹, Daniella Maritan-Thomson¹ & Anna A. Stec^{1,2}

Firefighters are exposed to toxic chemicals not only from the fire incidents they attend, but also from

www.nature.com/scientificreports

scientific reports

OPEN **Contamination of UK firefighters personal protective equipment and workplaces**

Taylor A. M. Wolfe¹, Anna Clinton¹, Andrew Robinson^{1,2}, Louis Turrell^{1,2} & Anna A. Stec^{1,2}

Firefighters' personal protective equipment (PPE) is a potential source of chronic exposure to toxic

www.nature.com/scientificreports

scientific reports

OPEN **Cancer incidence amongst UK firefighters**

Taylor A. M. Wolfe¹, Andrew Robinson^{1,2}, Kathryn Dickens¹, Louis Turrell^{1,2}, Anna Clinton¹, Daniella Maritan-Thomson¹, Miland Joshi¹ & Anna A. Stec¹

www.nature.com/scientificreports

scientific reports

OPEN **Mental health of UK firefighters**

Taylor A. M. Wolfe¹, Andrew Robinson^{1,2}, Anna Clinton¹, Louis Turrell^{1,2} & Anna A. Stec^{1,2}

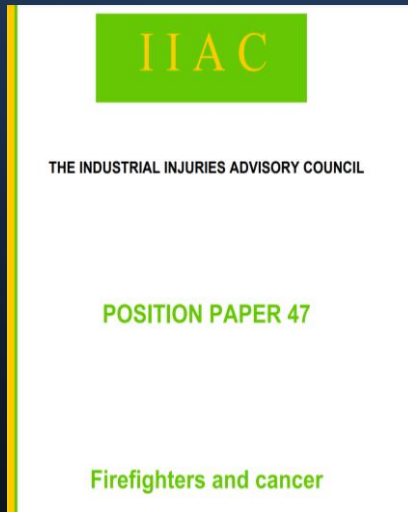
Exposure to trauma, high-stress situations, and disrupted sleep are well known risk factors affecting



Thank you for your attention

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Firefighters Occupational Cancers and Diseases



Independent report

Firefighters and cancer: position paper 47

Published 25 March 2021

Contents

[Industrial Injuries Advisory](#)

Industrial Injuries Advisory Council

Summary

The House of Commons Environmental Audit Committee (EAC) in their report 'Toxic Chemicals in Everyday Life' raised concerns about the exposure of firefighters and clean-up workers to toxic chemicals from the Grenfell fire.

This position paper updates earlier reviews by the Council of the risk of testicular cancer in firefighters (2008) and a commissioned a review into the health effects (malignant and non-malignant) of working as a fire-fighter (2010).

Thus, the Council did not find consistent evidence that the risk of any type of cancer is more likely than not to be due to firefighting i.e. the risk was more than doubled. The exception was mesothelioma which is already covered by the scheme. The Council has therefore decided against recommending prescription for cancer in firefighters, but it remains open to the possibility of reviewing its position as the research evidence base continues to grow. The Council is aware of several ongoing studies of exposures and

Health and Safety Executive

The Health and Safety Executive is a UK government agency responsible for the **ADVICE, GUIDE, REGULATION** and **ENFORCEMENT** of workplace health, safety and welfare, and for research into occupational risks in Great Britain.



The development of a 'female' form manikin as part of a test facility to assess the fire protection afforded by personal protective equipment

Prepared by **BTG** for the Health and Safety Executive 2006

The cover of a report titled 'Attendance management in the Fire and Rescue Service'. It features a red header with the HSE logo and the text 'Health and Safety Executive'. The title is in red, and the subtitle 'Managing sickness absence and managing and supporting attendance' is in black. Below the subtitle, it states 'Prepared by the National Centre for Social Research (NatGen) for the Health and Safety Executive and Communities and Local Government (CLG) 2008'.

The cover of a book titled 'Respiratory protective equipment at work'. It features a blue header with the HSE logo and the text 'Health and Safety Executive'. The title is in blue, and the subtitle 'A practical guide' is in black. Below the subtitle, it states 'HSG53 (Fourth edition, published 2013). You can buy the book at www.hsebbooks.co.uk and most bookshops. ISBN 978 0 7176 6454 2'. A small image shows a person wearing a respirator. Below the image, it says 'This book provides guidance on the selection and use of adequate and suitable respiratory protective equipment (RPE) in the workplace, in order to comply with the law. It tells you when you can use RPE, using a simple step-by-step approach. It helps you to decide the adequate level of protection for a given hazardous substance and how to select RPE that is suitable for the particular wearer, task and work environment. It also contains advice on how to make sure that the selected RPE keeps working effectively. This is a web-friendly version of HSG53 published 05/13'.

6.1 Scheme membership figures

The table below shows the latest available membership figures for the main public service pension schemes:

Public service pension scheme membership				
	Date	Membership type		
		Active	Deferred	Pensions in payment
UK / Great Britain				
Armed Forces Pension Scheme (UK)	Mar 2020	298,760	519,763	442,954
Civil Service Pension Scheme (GB)	Mar 2020	510,220	357,830	700,157
England and Wales				
Teachers Pension Scheme (E&W)	Mar 2019	702,773	638,458	729,471
NHS Pension Scheme (E&W)	Mar 2020	1,619,853	701,348	962,928
Local Government Pension Scheme (E&W)	Mar 2020	1,999,960	1,797,912	1,811,720 ‡
Firefighters Pension Scheme (England)	Mar 2020	32,519	17,309	46,291 *
Police Pension Scheme (England and Wales)	Mar 2016	120,673	27,786	152,020
Scotland				
NHS Superannuation Scheme (Scotland)	Mar 2020	178,092	65,671	110,421
Teachers Superannuation Scheme (Scotland)	Mar 2020	75,633	23,486	82,604
LGPS Scotland	<i>approx. (a)</i>	236,000	140,000	169,000
Police Pension Scheme (Scotland)	Mar 2016	16,599	3,530	16,492
Firefighters Pension Scheme (Scotland)	Mar 2016	5,580	1,518	5,304
Northern Ireland				
Civil Service (NI)	Mar 2020	29,265	8,682	31,668
Local Government (NI)	Mar 2020	68,153	32,316	38,579
Teachers (NI)	Mar 2020	25,177	16,345	24,523
Firefighters (NI)	Mar 2020	1,673	299	1,376

Sources

UK/GB: Civil Superannuation Resource Accounts; AFPS Annual Accounts

England and Wales: Teachers' Pension Scheme (E&W) Annual accounts; NHS Pension Scheme Resource Accounts; LGPS E&W statistics (*Note ‡ pensioner total includes a small number of 'flexible retirees'*); Fire statistics data table FIRE1304 firefighters' pension membership (*Note * pensioners includes age retirement and ill-health retirement pensioners*)

NFCC Fire Contaminants Project

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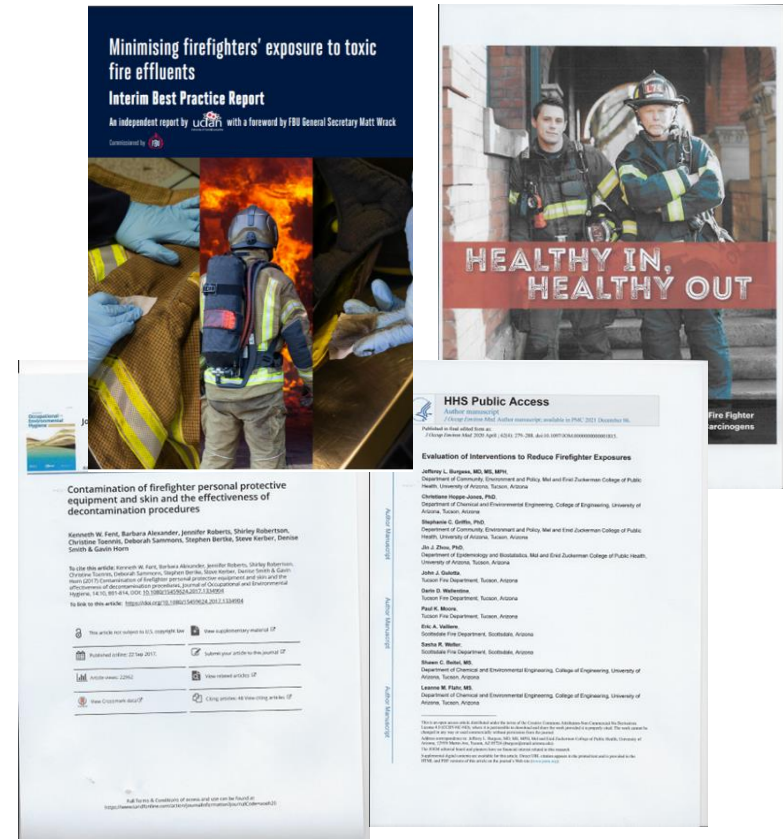
Project Overview

- **NFCC have a specific contaminants working group operating under the oversight of the NFCC Health and Safety Committee. The group is taking a holistic approach to the issue and want to ensure that we have a full picture of the situation before advocating for any such policies.**
- **Conscious of the occupational risk to firefighter health and wellbeing, our priority is the safety of FRS staff and establishing the full picture of how contaminants, PPE, and decontamination procedures all factor into cancer risk.**
- **Project Toolbox**

Work Packages

1. Literature Review
2. Risk Assessment / Safe Systems of Work
3. Estates
4. Training and Development
5. Health Surveillance
6. Personal Protective Equipment
7. Respiratory Personal Equipment
8. Appliance and Equipment
9. National Guidance

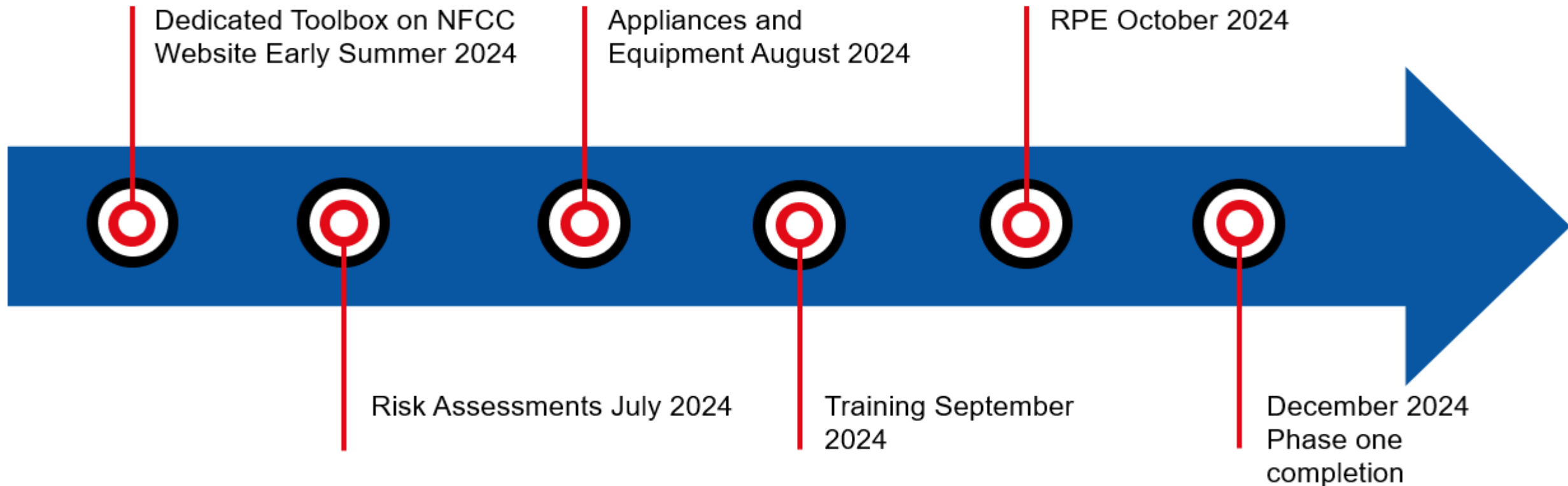
NFCC Toolbox for Guidance and Best Practice



NFCC Data Analysis

- **Survey design – FRSs asked to rate against 160 recommendations**
- **Survey launch – summer 2023 with returns by December 2023**
- **Each FRS has an overall percentage score based on the proportion of recommendations that were started and on track, started and not on track and completed**
- **Better progress on PPE, Guidance and Personal decontamination practices**
- **Slower progress on Appliances and equipment**
- **Not started recommendations are around Health Surveillance and Estates**

Project Pipeline





NFCC
National Fire
Chiefs Council

Next Steps

- **Phase 2 – PPE and continual Literature Review**
- **Dedicated support for FRS with guidance and implementation**
- **Assurance that best practice is embedded in UK FRS**