



HM Government

National Risk Register

2020 edition



Contents

3	Foreword	22	Chapter 4: Risk summaries	87	Societal risks
4	Chapter 1: Introduction	23	Environmental hazards	88	Industrial action
5	Purpose of the National Risk Register	24	Flooding	90	Widespread public disorder
6	What has changed since the 2017 National Risk Register?	29	Severe weather	93	Serious and Organised Crime
6	Who has been involved in the creation of this document?	33	Severe space weather	94	Organised immigration crime and modern slavery
7	Chapter 2: Risk assessment	37	Volcanic eruptions	98	Firearms
8	Risk matrix	39	Poor air quality	102	Drugs
11	Reading the matrix	42	Earthquakes	105	Bribery and corruption
11	How are these risks identified and assessed?	45	Human and animal health	107	Child sexual abuse
12	Long-term trends	46	Human diseases	109	Malicious attacks
15	Chapter 3: Individuals and communities	50	Case study: COVID-19	110	Introduction
16	Preparedness advice for the public	59	Animal diseases	113	Attacks on publicly accessible locations
18	Supporting communities and volunteering	63	Antimicrobial resistance	117	Attacks on transport systems
20	Mental health needs in emergencies and crises	67	Major accidents	121	Attacks on infrastructure
21	Vulnerable / at-risk groups	68	Widespread electricity failure	124	Chemical, biological, radiological and nuclear attacks
		71	System failures	127	Cyber attacks
		74	Major transport accidents	131	Disinformation
		77	Industrial accidents	135	Risks occurring overseas
		83	Major fires	136	Risks occurring overseas

Foreword

The United Kingdom, along with the rest of the world, is facing the huge challenge of tackling COVID-19 to protect public health and manage its impact on lives and livelihoods, the economy and our way of life.

The numerous ways individuals and organisations from across society – in both professional and voluntary capacities – have joined together and made extraordinary efforts has defined our response. It has demonstrated the enduring characteristics of the UK as a nation of resilience, resolve, and kindness.

In recent years, we've seen these personal qualities and professional responses come to the fore at times of crisis and in the face of a diverse range of risks – from terrorist attacks, severe winter weather and flooding to commercial failure and drone disruption of airport operations.


While we tackle COVID-19, we must not lose sight of the other risks and challenges that remain, some of which have increased or changed as a result of the pandemic.

The 2020 National Risk Register sets out the range of risks and challenges we face which have the potential to cause significant disruption to the UK, and explains what the government and partners are doing to mitigate these risks and how we all can prepare for and respond to them.

The impact of some of these risks can be felt beyond our home or local area, even stretching beyond the borders of any single country. COVID-19 has changed people's lives in the UK and across the globe, likely with long-lasting consequences. We must look to the future and consider how we adapt to those changes and take advantage of new opportunities, while also improving our ability to tackle existing and emerging risks.

We all have a role to play in building a safer, more resilient, and more prosperous UK. Governments, individuals, communities and businesses across all four nations, along with international partners, can and must work together. By doing so, we can help to ensure we are as informed about the risk landscape as possible, take the right actions to strengthen our resilience and proactively tackle both current and future challenges.




Penny Mordaunt MP
Paymaster General

Chapter 1: Introduction



Purpose of the National Risk Register

Since the publication of the 2017 National Risk Register (NRR), the UK has been challenged by many incidents – terrorist attacks in London Bridge and Streatham, the collapse of the Thomas Cook Group and Carillion, the 'Beast from the East' winter storm, the use of chemical weapons in Salisbury and Amesbury, serious flooding incidents, and the COVID-19 pandemic to name but a few. These incidents represent acute challenges to the UK, causing widespread impacts to our national security and prosperity. But they are not the only risks that the UK has faced, or will face. Risks can take many forms, originate inside or outside of the UK, exacerbate the likelihood or impact of another risk, and be felt on a national and increasingly global scale. The UK government and devolved administrations, along with the emergency services and other local responders, have an important role to play in identifying, assessing, preparing for and responding to risks, as well as supporting affected communities to recover. The COVID-19 pandemic has also highlighted the critical role of the public in preparing for and responding to crises.

The NRR is the public-facing version of the National Security Risk Assessment (NSRA) – a classified cross-government and scientifically rigorous assessment of the most serious risks facing the UK or its interests overseas. The Civil Contingencies Secretariat, which is part of the Cabinet Office, is responsible for co-ordinating the production of both documents. This involves working closely with a wide range of stakeholders including other UK government departments, devolved administrations, the government scientific community, intelligence and security agencies, and a range of independent experts such as industry partners and academics.

The NRR provides information on the most significant risks that could occur in the next two years and which could have a wide range of impacts on the UK. The NRR also sets out what the UK government, devolved administrations and other partners are doing about them. This document is particularly useful to local emergency planners, resilience professionals and businesses, helping them to make decisions about which risks to plan for and what the consequences of these risks are likely to be.

It also contains information and advice for the public. It is important that individuals and households are aware of the risks that could affect them, and what actions they can take to prepare for and respond to these risks. The information in pages 15–21 and the risk summaries which begin on page 22 include useful advice and links to further sources of information.

No risk assessment will ever be able to identify and assess every possible risk – unforeseeable risks can emerge, or previously identified risks can materialise in novel or surprising ways. The NRR is not a prediction of the risks that will materialise in the next two years, but it does help to ensure that the UK has the right systems and resilience practices in place to manage risks both proactively and when they arise.

What has changed since the 2017 National Risk Register?

This 2020 NRR includes a broader range of risks to the safety and security of the UK than previous iterations, reflecting technical improvements to risk assessment approaches and demonstrating the full range of challenges facing the UK.

The UK government's assessment of risks is based on a continuous cycle of learning lessons from real events, changes in scientific or technical evidence and intelligence, and improvements to the way in which the likelihood and potential impacts (consequences) of risks are calculated. Therefore, the UK government's assessment of some of the risks have changed since the last NRR. In some cases, the changes are the result of new or improved understanding of the risk and its triggers and effects, or because of more effective monitoring and warning systems and improvements to preparedness. In other cases, amendments to the NSRA's underpinning method, including the impact and likelihood scales, have shifted where risks are plotted in the 2020 NRR matrix compared to the 2017 iteration.

For the 2020 NRR, new risk summaries are included for:

- serious and organised crime risks
- disinformation
- hostile state activity

Additionally, the following risks discussed in the 2017 NRR have now been formally assessed and plotted on the risk matrix in the 2020 NRR:

- antimicrobial resistance
- major fires

All risk summaries in Chapter 4 have been reviewed and updated by UK government departments and other risk-owning bodies to ensure the content is current at the time of publication.

The 2020 NRR assessments for pandemics and High Consequence Infectious Disease outbreaks do not include COVID-19 as, at the time of writing, this is a live issue. However, a dedicated case study for COVID-19 is included independently of the assessments themselves on page 50.

Who has been involved in the creation of this document?

The 2020 National Risk Register has been produced by the Civil Contingencies Secretariat in the Cabinet Office, in collaboration with risk-owning departments and organisations who provided content specific to their risks in Chapter 4 and Government Communication Service professionals. Input was also received from government behavioural scientists, members of the Civil Contingencies Secretariat's independent Behavioural Science Expert Group and the Winton Centre for Risk and Evidence Communication at the University of Cambridge.

Chapter 2: Risk assessment



RISK



Risks are assessed in terms of likelihood and impact.

Risk matrix

Risks in the NSRA and the NRR are represented as 'reasonable worst case scenarios'. This means that they represent the worst plausible manifestation of that particular risk (once highly unlikely variations have been discounted) to enable relevant bodies to undertake proportionate planning. They are assessed in terms of likelihood and impact and then plotted onto a matrix, see page 9.

Instead of plotting each individual risk onto the matrix, a number of risks have been thematically grouped, bringing together risks that share similar risk exposure and require similar capabilities to prepare, mitigate and respond. This is partly to bring similar risks together in a more usable way, but is also due to the sensitivity of some of the risks assessed in the NSRA. The position of each risk category on the matrix below is an average based on the positions of all the different risks that belong to that category.

Impact <small>(of the reasonable worst case scenario using the impact indicators below)</small>	Level E		7 25 [†]			
	Level D	34 [*]	12 13 29			
	Level C	18 28 33 [*] 36 [*]	14 19 21 26 [†] 27 [*] 38	2 3 6 [*] 15 16 17 20		
	Level B	30	24	35 [*]	4 5 9 [*] 10 [*] 11 [*] 23 32 [*] 37	1
	Level A		8 [*] 22	31		
	< 1 in 500	1 to 5 in 500	5 to 25 in 500	25 to 125 in 500	> 125 in 500	

Likelihood

(of the reasonable worst case scenario of the risk occurring in the next year)

^{*}Risk not plotted in the 2017 NRR | [†]COVID-19 is not included in the risk matrix and is therefore not included in these risks

Malicious Attacks

1. Attacks on publicly accessible locations
2. Attacks on infrastructure
3. Attacks on transport
4. Cyber attacks
5. Smaller scale CBRN attacks
6. Medium scale CBRN attacks
7. Larger scale CBRN attacks
8. Undermining the democratic process*

Serious and Organised Crime

9. Serious and organised crime – vulnerabilities*
10. Serious and organised crime – prosperity*
11. Serious and organised crime – commodities*

Environmental Hazards

12. Coastal flooding
13. River flooding
14. Surface water flooding
15. Storms
16. Low temperatures
17. Heatwaves
18. Droughts
19. Severe space weather
20. Volcanic eruptions
21. Poor air quality
22. Earthquakes
23. Environmental disasters overseas
24. Wildfires

Human and Animal Health

25. Pandemics*
26. High consequence infectious disease outbreaks*
27. Antimicrobial resistance*
28. Animal diseases

Major Accidents

29. Widespread electricity failures
30. Major transport accidents
31. System failures
32. Commercial failures*
33. Systematic financial crisis*
34. Industrial accidents – nuclear*
35. Industrial accidents - non nuclear*
36. Major fires*

Societal Risks

37. Industrial action
38. Widespread public disorder

Level	Indicative impact scale indicators	
E	<ul style="list-style-type: none"> • Economic impacts: more than £10 billion. • Fatalities in the UK: more than 1000. • Evacuation and shelter: 100 thousand people evacuated over 3 days. • Public perception: extreme, widespread, prolonged impact owing to significant proportions of the UK population feeling more vulnerable. 	<ul style="list-style-type: none"> • Environmental damage or contamination: of city(ies) or region for more than 5 years. • Essential services: lack of health and care services affecting 40% of the population for 30 days. • Electricity supply: national loss of electricity supply for any period or regional loss of supply for longer than 1 week. • International relations: significant damage to UK relationship with key allies.
D	<ul style="list-style-type: none"> • Economic impacts: £1 billion to £10 billion. • Fatalities in the UK: circa 201 to 1000. • Evacuation and shelter: 20 thousand people evacuated over 3 days. • Public perception: high impact owing to millions of UK citizens feeling more vulnerable. 	<ul style="list-style-type: none"> • Environmental damage or contamination: of a county OR city(ies) for approximately 1 year. • Essential services: lack of health and care services affecting 20% of the population for 7 days. • Electricity supply: major disruption to electricity supply to 1 million people for longer than 18 hours. • International relations: moderate damage to UK relationship with key allies.
C	<ul style="list-style-type: none"> • Economic impacts: £100 million to £1 billion. • Fatalities in the UK: circa 41 to 200. • Evacuation and shelter: 5 thousand people evacuated over 3 days. • Public perception: moderate impact owing to hundreds of thousands of UK citizens feeling more vulnerable. 	<ul style="list-style-type: none"> • Environmental damage or contamination: damage to/contamination of a local area for 1 year. • Essential services: lack of health and care services affecting 10% of the population for 12 hours. • Electricity supply: major disruption to electricity supply to greater than 300 thousand consumers for longer than 18 hours. • International relations: significant damage to UK relationship with international partner country/organisation.
B	<ul style="list-style-type: none"> • Economic impacts: £10 million to £100 million. • Fatalities in the UK: circa 9 to 40. • Evacuation and shelter: 200 to 1 thousand people evacuated over 3 days. • Public perception: minor impact owing to tens of thousands of UK citizens feeling more vulnerable. 	<ul style="list-style-type: none"> • Environmental damage or contamination: of the local area for 1 month OR of building for 1 year. • Essential services: lack of health and care services affecting 2% of the population for 12 hours. • Electricity supply: major disruption to electricity supply to greater than 100 thousand people for longer than 18 hours. • International relations: moderate damage to UK relationship with international partner country/organisation.
A	<ul style="list-style-type: none"> • Economic impacts: less than £10 million. • Fatalities in the UK: circa 1 to 8. • Evacuation and shelter: 50 people evacuated over 3 days. • Public perception: limited impact, small numbers of the public (less than tens of thousands) feeling more vulnerable. 	<ul style="list-style-type: none"> • Environmental damage or contamination: of a building for up to 1 month. • Essential services: lack of health and care services affecting 1% of the population for 6 hours. • Electricity supply: major disruption to electricity supply to greater than 10 thousand people for longer than 18 hours. • International relations: moderate damage to UK relationship with any other country.

The impact scale indicators above set out the types and severity of impacts the UK might expect to see for the different level risks. The list above should NOT be read as a set of criteria that needs to be met in order for an assessed risk to be classified at these levels.

Reading the matrix

The above NRR matrix presents the impact and likelihood of a plausible worst case scenario manifestation of each risk. Highly unlikely variations have been discounted. It can be read as follows:

- **The vertical axis shows the impact of each risk.** Level A is the lowest impact, and Level E the highest. The impact scale is logarithmic and is reflected by the matrix boxes increasing in size. The indicators on page 10 set out the indicative impacts expected at each level. These indicators should not be read as criteria that must be met in order for a risk to be plotted at a given level – some risks will have individual impacts that are higher than the risk's overall impact assessment, others lower.
- **The horizontal axis shows the annual likelihood of each risk.** The likelihood range in each column, moving from left to right, is five times greater than the previous column. For example, a column three risk is approximately five times more likely to occur than a column two risk. The likelihood scale is logarithmic and is

reflected by the matrix boxes increasing in size, moving from the bottom left of the matrix to the top right. Risks have been plotted, using the key to the right of the matrix, and grouped under headings to reflect the chapters in the NRR.

How are these risks identified and assessed?

Risks were identified for inclusion in the last NSRA (completed in 2019) by consulting a wide range of experts from across UK government departments, the devolved administrations, the government scientific community and outside of government (for example, in partner agencies, academic institutions and industry). The scenarios for each risk were produced in consultation with experts and data was collected from a wide range of sources. Independent expert groups and the chief scientific adviser community provided challenge to the final assessments, all of which were collectively agreed on the basis that they could plausibly occur in the next two years and could cause significant harm and disruption in the UK, or to UK interests abroad.

Once risks identified for inclusion in the NSRA were agreed, each departmental risk owner produced a reasonable worst case scenario for each risk in consultation with, for example, their Chief Scientific Adviser, internal experts and analysts, other departments and agencies, the intelligence community, industry and sector stakeholders, and external scientific, academic and policy subject experts. The Civil Contingencies Secretariat also convened expert review groups to independently review risks, drawing on expertise from the public, private and academic sectors. It is these finalised reasonable worst case scenarios which were formally assessed within the NSRA process.

Assessing likelihood

Departmental risk owners of non-malicious risks (e.g. severe weather events or industrial accidents) assessed the likelihood of each reasonable worst case scenario occurring within the next year using extensive data, modeling, and expert analysis. The resulting likelihood (expressed as a percentage) was then placed on the five-box scale.

The likelihood of malicious risks (for example, terrorist attacks or cyber attacks) is assessed slightly differently. The intent of malicious actors to carry out an attack is balanced against an assessment of their capability to conduct an attack and the vulnerability of their potential targets to an attack. These three parameters, informed by data and expert insight, are collated together to form one likelihood score (expressed as a percentage) which is comparable with the likelihood of the non-malicious risks and can be plotted on the same matrix.

Assessing impact

All risks in the NSRA have a wide range of impacts, whether on individuals, businesses, regions or the whole country. To capture this range, the NSRA assesses impact across seven broad dimensions:

- the impact on **human welfare**, including fatalities directly attributable to the incident, casualties resulting from the incident (including illness, injury and psychological impacts), and evacuation and shelter requirements
- **behavioural** impacts, including changes in individuals' behaviour or public outrage
- the impact on **essential services**, including disruption to transport, healthcare, education, food, water, energy, emergency services and telecommunications
- **economic damage**, including lost tourism and reduced working hours
- **environmental impact**
- the impact on **security**, including on law enforcement and the criminal justice system
- **international** impacts, including damage to the UK's international relations, etc.

Each of the dimensions listed above is scored on a scale of 0 to 5 and these scores are then combined to provide a single overall impact score.

Long-term trends

The NRR is a resource designed to provide the public with our latest understanding of the UK risk landscape, excluding those risks which are currently materialising. However, it is important to note that many of these risks will continue to evolve as various long-term trends become increasingly influential. Some of these trends may arise from short-term, acute events such as a pandemic, and others might arise from longer-term chronic influences such as climate change. The NRR does not assess the impact and likelihood of these trends occurring. Instead, the following section aims to provide broad context for what some of these long-term trends are and some of the changes they might bring about in the risks facing the UK.

Climate change

Climate change is a significant crisis facing the global community, and one we will need to continue to confront head-on in the UK amid warmer winters and hotter summers,

plus more variable rainfall and more severe storms. Sea levels are rising by 3 millimetres a year around the UK coastline, increasing the risk to buildings close to the shoreline. Extreme weather – flooding, storms, heatwaves – already causes significant disruption in the UK every year, so we should not underestimate the challenges that a more extreme climate will have on our lives, the economy and our environment.

The issue of climate change is by no means limited to the UK. Its impacts are felt worldwide by billions of people – for example through drastic changes to food and water supply, the displacement of large groups of people, the occurrence of major natural disasters such as hurricanes or wildfires, or as an influence on health and wellbeing. Climate change, alongside other factors such as globalisation, will also have a critical influence over the nature and spread of diseases. A global problem will require a global solution.

More information on climate change can be found in the **2017 UK Climate Change Risk Assessment** (with the next iteration due in 2022).

Geopolitics

Conflict and instability around the world is likely to continue, driven by resource shortages and regional tensions, plus the displacement of large groups of people due to issues such as climate change. Regional warfare can enable terrorist activity and an increasing number of non-state actors will likely exert power in arenas such as cyber space. These patterns of instability directly threaten British nationals overseas, and can cause significant tension between trading partners. Some states will also continue to push the boundaries of what is internationally acceptable behaviour. Sanctions might be imposed more frequently to minimise conflict, which could then compromise the trade of essential goods and services.

Technology

Technological advancements, combined with major changes in how we live and work, will be a key factor in our risk landscape in the coming years. Technology can bring people closer together, foster a truly globalised economy, reduce unequal access to information around the world and, of course, will be fundamental in how the UK manages risk in the future.



The influence of long-term trends on risks will be felt by future generations worldwide.

However, it can also create and enhance vulnerabilities and offer opportunities for malicious actors to do the UK harm. Cyber security – covered in more detail in this document on page 127 and in **the UK's National Cyber Security Strategy** – is fundamental to individual and business resilience and will help protect everyone from issues including malware, viruses, ransomware, fraud, and intellectual property theft.

Other technological advances, such as the development of **artificial intelligence** and **quantum technologies**, will see shifts in how our economy functions and the nature of how we work in the future. While much of this change may be beneficial, we must all remain aware of these changes and work through the implications on people and businesses in the coming years. More information can be found in the **Government Technology Innovation Strategy**.

Health and demographics

Our health can be influenced by numerous factors such as age, socio-economic status and lifestyle.

Chronic health problems (for example obesity – which can increase an individual's vulnerability to other diseases – or poor mental health) are likely to become increasingly pervasive in the UK due to social or economic structural changes that might arise from COVID-19, lifestyle changes, and population ageing. Substance abuse or homelessness might also arise concurrently alongside the economic impacts of COVID-19. There will be an increasing vulnerability to dementia and cancer in the UK as the population continues to age, and this in turn will put increasing pressure on our health and social care systems.

Antimicrobial resistance (AMR) – the process where drugs are no longer effective at treating infections caused by bacteria, viruses and parasites – is one such trend with a growing impact. The World Health Organisation lists AMR as one of the most significant risks facing the world and estimates that it could cause a 3.5% global drop in GDP by 2050 through lost productivity, stemming from a workforce that is sicker with more challenging ailments for longer periods of time. A **2016 review on AMR** found that at least 700,000 people – which is likely an underestimate – die every year from drug-resistant infections worldwide, and in the UK alone, there was a 9% increase in deaths caused by drug-resistant infections between 2017 and 2018. The UK published a new **5 year action plan to tackle AMR** in 2019. This is, however, a global issue and will require global collaboration and a focus on ensuring a sustainable supply chain of drugs, as well as the correct use of them in treating illnesses. For more information please see the 'Antimicrobial resistance' section in Chapter 4: Risk summaries.

Chapter 3: Individuals and communities



Preparedness advice for the public

There are a number of actions the public can take to prepare for and respond to the risks included in this document. It is important for individuals to consider these in the context of their own specific circumstances and daily routines, as well as the risks they may face when living or working in certain locations.

1. Understand the risks

The public can be better prepared if they are aware of and informed about the risks that are most likely to affect them. In addition to reading the information given in Chapter 4 of this NRR, the public can:

- find out more about the risks in a specific area by reading their local community risk register:
 - **community risk registers in England and Wales**
 - **community risk registers in Scotland**
- sign up for **flood alerts** or **weather updates**
- check online to see which areas are at immediate risk of flooding or are likely to flood in the future:

- **flood risk in England**
- **flood risk in Scotland**
- **flood risk in Wales**
- **flood risk in Northern Ireland**
- check the **Foreign, Commonwealth and Development Office's travel advice** before travelling overseas
- read the latest updates to the UK's Joint Terrorism Analysis Centre and Security Service's (MI5) **terrorism threat levels**
 - more information on what the different levels mean can be found on the **MI5 website**
- check online for more information about any **local or national COVID-19 measures**

2. Take steps to prepare

There are a number of activities that members of the public could undertake to prepare for, prevent, and mitigate the impacts of risks. Many of these activities can be helpful across a range of different risks and aren't specific to one scenario.

Some examples of actions the public could take include:

- signing up for first aid training – courses can provide useful, potentially lifesaving skills that can be helpful in a variety of emergency situations
- teaching children about how and when to call the emergency services
- speaking to their child's school to find out their procedures in the event of different emergency scenarios
- storing important documents (e.g. insurance documents and key contact numbers) and important items (e.g. medication and identification) in an easily accessible location in case of emergency or an evacuation at short notice (and not attempting to retrieve these items if it becomes dangerous to do so)
- keeping some basic supplies at home such as bottled water, a torch and batteries (which is safer than candles), and a wind-up radio to get updates during a power cut
- knowing how to turn off gas, water and electricity in the home
- checking the right insurance is in place for home or business (e.g. flood insurance) or travel insurance when planning a trip
- finding out about evacuation procedures in the workplace

- joining a community group or social club that is active in emergency preparedness
- signing up to the local authority or local utilities provider's vulnerable customer schemes and priority services (if eligible)

Depending on local risk assessments, individual circumstances or current events, more specific activities may be appropriate. Information on specific preparedness or response activities can be found in the risk summaries in Chapter 4.

3. Know how to respond

If members of the public know in advance what to do and what to expect from responding agencies during an incident, it could lead to a more effective response and reduce physical harm, stress and anxiety for those involved.

In the event of an emergency, the public can play a vital role by alerting the emergency services (dialling 999) and by providing first aid, comfort and support while waiting for the emergency services to arrive.

Depending on the nature of the incident, those affected may be asked to 'go in, stay in and tune in' to local radio stations or check official sources of information online. Unless there is an obvious risk to the building, going inside and seeking further information is often the safest thing to do. People should always be guided by what they can see going on around them – for example, it is never safe to return to a building that is on fire.

In some situations, the public may need to evacuate for their own safety. It is important for people not to delay evacuating their properties or general locality if asked to by the responding authorities. Delaying or refusing to evacuate may put individuals' own lives at risk, as well as putting emergency responders in danger if they later have to return to properties to deliver the evacuation request again.

4. Help with recovery

Recovery is a complex process, beginning at the earliest opportunity and running in tandem with the emergency response. Recovery from a serious incident can last months, years or even decades.

If it is safe to do so, members of affected communities are encouraged to participate in the recovery process and should be involved in determining how recovery is best achieved in their community.

In the recovery phase of an incident, members of the public who wish to help should look out for calls for support from a local authority or national and local charities, to assist with the clean-up or to help others in their community get back on their feet.

As well as providing practical assistance with community recovery, members of the public can also provide support to other individuals affected by an incident, for example by listening to those who want to talk about their experiences. It is important to look out for persistent signs of distress in trauma-exposed individuals and if symptoms do not resolve with informal support, to point the affected individuals towards professional help. See the [NHS England website](#) and [Scotland's NHS Inform website](#) for more information.



Members of the public can find out how to help their community with an emergency by visiting a local volunteer centre or searching online.

Supporting communities and volunteering

When emergencies happen, people often feel compelled to help. Professionals and volunteers train for emergencies, but other members of the community can also be involved through acts of good neighbourliness and spontaneous volunteering. Bringing people and organisations together to form effective networks is key to building community resilience, preparing for emergencies, and making the best use of all available resources.

If the worst happens, members of the public can often rally their skills and resources to help their community. No matter who wants to help, what abilities they have, or whether they have volunteered previously, there may be ways for them to help. There are numerous **opportunities to volunteer across the UK**. Individuals can also find out how to get involved with their community before, during and after an emergency by visiting a local volunteer centre or searching online.

Before an emergency, members of the public, community organisations and local businesses can help to build the resilience of:

- **individuals**, by raising awareness of risks and preparedness actions, e.g. through social media
- **households**, by advising on property refurbishment such as property flood defence measures
- **communities**, by identifying vulnerable people and helping them access support
- **organisations**, by supporting business continuity planning
- **systems and networks**, by building trusting relationships between different local and community organisations

During an emergency or crisis, the public can help – if it's safe to do so – by checking on neighbours and vulnerable people in the community to see if they need any help or assistance.

After the emergency, the public can also offer their help to clean up, help others to get back on their feet, or help their community to come to terms with the situation. Opportunities to volunteer might be available through one of the thousands of local organisations that already work at the heart of communities.

Even if people feel motivated and able to help, in many cases it is best not to just turn up at the scene of an emergency and begin working. This could be dangerous and overwhelm the emergency services. Instead, it is best to get involved via the structures that have been established in the local area, so everyone can work safely for the benefit of those who need help. This means looking out for calls for support from a local authority, or national and local charities, and most importantly, performing essential acts of good neighbourliness.

The capacity of communities to support each other was seen clearly in response to the COVID-19 pandemic, when people from across the UK came forward to help their communities.

- In England, over 750,000 people registered to join the NHS Volunteer Responder scheme, offering their time to undertake important tasks such as medicines and food collection, patient transport and providing telephone befriending to vulnerable people.

- The 'Scotland Cares' campaign saw over 60,000 volunteer sign ups via **Ready Scotland**, which provided links to register with established volunteering organisations to support public services, local charities and community groups.
- In Northern Ireland, the Department of Communities, the voluntary and community sector and local councils worked together to co-ordinate the large-scale community response to the pandemic, where people volunteered to undertake tasks that provided support to the health service and wider society.
- In Wales, there was an unprecedented response to the call for volunteers, building on the strong tradition of people helping one another across communities. People and businesses offered time and resources to support local services and help each other by undertaking volunteer shopper and delivery roles, and befriending over the phone.

The impact of shielding and isolation for the most at-risk also saw the emergence of thousands of mutual aid groups across the UK. These self-organising, community-based groups played a crucial role in helping with tasks such as shopping, collecting prescriptions, walking dogs and providing emotional support to vulnerable and self-isolating people in their communities.

Guidance for organisations

The UK government published the **Community Resilience Development Framework** and **guidance on 'planning the co-ordination of spontaneous volunteers'** in June 2019. These documents can help public and private organisations to appreciate the challenges that an emergency can bring and to make appropriate preparations.

Mental health needs in emergencies and crises

In the immediate aftermath of a major incident or crisis, it is important to consider the mental health needs of those who may have been affected.

This includes people who were directly involved, such as those present at the scene of an emergency or those who became ill during an infectious disease outbreak. It also includes emergency responders and healthcare staff caring for people involved in the incident.

It's also crucial to consider people who were indirectly involved, such as relatives of the injured, sick or deceased and anyone who may feel responsible for the incident or some aspect of the response.

There is strong evidence that people who have been exposed to a traumatic event, and who experience other significantly stressful circumstances (such as financial issues or

problems related to children) find it more difficult to cope in the aftermath of a traumatic event. The secondary stressors that often follow crises can persist for long periods of time. They do not end when the emergency service response concludes, but can continue well into the recovery phase of an event.

However, it is important to recognise that while many people feel upset and distressed in the days and weeks after a traumatic experience, most short-term distress responses resolve without the need for professional help. Most trauma-exposed people benefit from informal support such as sharing feelings with others with similar experiences, speaking with people they trust, having a supportive line manager and colleagues, sticking to a routine, paying attention to healthy living (trying to get enough sleep, exercise, regular meals) and letting some time pass. All of these approaches may be beneficial to someone's mental health, but if adverse symptoms do persist a person should always seek further help from their GP.

There is good evidence that providing psychologically-focused debriefing, or trauma counselling, in the immediate post-incident period is not only ineffective but may cause additional harm. Instead, it is a good idea to actively monitor those who have been directly or indirectly affected for a few months after a traumatic event. If their difficulties do not appear to be resolving, then they should be advised to speak to a healthcare professional who can assess whether or not they need formal mental health treatment.

Find more information about accessing help and what to do when feeling upset or distressed after a traumatic event at:

- [NHS England website](#)
- [Scotland's NHS Inform website](#)
- [the Royal College of Psychiatrists](#)

More general advice and support related to mental health and wellbeing can be found on the [NHS Every Mind Matters website](#).

Vulnerable/at-risk groups

The UK is faced with a wide range of risks that could have a disproportionate impact on specific vulnerable and at-risk groups.



Some risks could have a disproportionate impact on specific vulnerable and at-risk groups.

Individuals within these groups are likely to experience higher levels of morbidity and mortality in comparison to the general population. They are also more likely to suffer financial hardship either as a direct or indirect consequence of a risk materialising. For example, across the world we have seen previous events place an inequitable burden on individuals such as:

- those with pre-existing mental or physical health conditions or disabilities (whether living in the community or in long-term care facilities)
- older adults
- children
- pregnant women
- individuals from certain ethnic backgrounds
- healthcare and other frontline workers
- informal or self-employed workers
- those in lower socio-economic groups or who are financially insecure
- individuals exposed to abuse or violence
- tourists
- migrants
- those who are socially isolated
- individuals with less knowledge and experience related to specific risks

This list is not exhaustive, but illustrates the wide range of groups who could be considered (or could become) vulnerable in the context of a pandemic.

Vulnerable groups are not static entities. Individuals who might be considered vulnerable in the context of one risk might not be for another, or they might even be considered more resilient than the general population. For example, an older adult might be more vulnerable to the health impacts of a pandemic, but may be considered more resilient to certain aspects of a flooding scenario, if past experiences have helped them to prepare.

The risks discussed in Chapter 4 could result in unequal impacts for individuals. Every scenario is different but, when planning for and responding to these risks, planners from national government, local government and community groups all have an important role to play in mitigating the disproportionate impacts on these individuals.

Chapter 4: Risk summaries



Environmental hazards



Flooding

What's the risk?

Flooding can have a devastating and long-term impact on people's lives. Everywhere in the UK is at risk from at least one form of flooding. There are three main types of flooding considered within this document:

- **coastal** (where high tides and storm surges combine to cause the sea to flood inland)
- **rivers and streams**, known as 'fluvial flooding' (where waterways overflow their banks into surrounding areas)
- **surface water** (where rainfall overwhelms drainage systems)

Some flood risks are tied to specific geographic features such as coastline or flood plains (low-lying land near a river), but surface water flooding can occur in a wide variety of locations including towns or cities far from the sea or rivers. Surface water flooding is also particularly difficult to forecast with accuracy and can happen at very short notice.

When flooding occurs, infrastructure (such as bridges) and flood defences can sometimes be overwhelmed with little, if any, notice, leading to additional disruption. It is also possible for all three forms of flooding to occur in different locations around the UK at the same time.

Consequences of flooding may include:

- fatalities and casualties (physical and psychological)
- evacuation and shelter (sometimes long-term) of residents and employees
- widespread damage to property and infrastructure
- disruption to essential services, particularly transport and energy
- environmental damage or contamination (particularly by sewage)

The UK's **Climate Change Risk Assessment**, last published in 2017, highlighted that more intense rainfall, more extreme weather and wetter winters are projected to increase the threat of damage and disruption as a result of all types of flooding.

Storm surges

Low atmospheric pressure allows the sea's surface to bulge upwards in what is called a 'storm surge'. If strong persistent onshore winds occur, these increase the height of the surge and generate waves that can damage the coastline. Surges can occur at any point on the tidal cycle. While they rarely cause flooding at low tide, they can cause significant flooding when they occur at high tide.



Storm surges can damage the coastline.

Have such events happened before?

The winter of 2019–20 was wetter than average for the UK, causing major flooding in November and December 2019. The weather in February and March 2020 was also particularly unsettled, with three subsequent **named storms** causing widespread disruption. Named storms are likely to cause significant impacts and lead to the Met Office issuing amber or red weather warnings.

Between 8 February and 16 February, most of the UK saw the equivalent of an entire month's rainfall. Across east Wales, the West Midlands, and an area from the Pennines to Edinburgh, this was even higher, at 150% of an average month's rainfall. Over 200% of the monthly average rainfall fell in parts of the Pennines, and Herefordshire and Worcestershire.

On 17 February 2020, the Environment Agency issued 632 flood warnings and flood alerts: the highest one-day total since the system went live in 2005. More than 128,000 properties were protected by Environment Agency defences, five fatalities were confirmed as a result of the flooding, and more than 3,000 properties were flooded in England.

Utilities have also been impacted. United Utilities suffered damage to a water main during Storm Ciara, which resulted in approximately 5,500 properties in Cumbria losing water supply. Over 25,000 customers across the country had disruption to power supplies following the impact of Storm Dennis.

What's being done about the risk?

Reducing vulnerability

Flood defences

Between 2015 and 2021, the UK government is spending over £1 billion in England on maintaining flood defences and £2.6 billion on better protecting 300,000 homes. Starting in 2021, the government will invest a further £5.2 billion in a six-year capital investment programme for flood defences in England. This investment will better protect 336,000 properties from flooding and coastal erosion. The government will also provide an additional £120 million to repair flood defences in England which were damaged in winter 2019–20 flooding. The Environment Agency has invested in 25 miles of temporary barriers which can be transported to protect places in need.

The Scottish Government is also investing an extra £150 million in flood risk management over a five-year period from 2021–22. This investment complements the £42 million provided annually to local authorities to provide flood protection schemes throughout Scotland.

Between 2015 and 2020, the Department for Infrastructure in Northern Ireland spent over £39 million on flood defence work and procured approximately 1.5 miles of temporary flood barriers which can be transported to protect places in need.

The Welsh Government committed over £390 million to flood and coastal risk management between 2016 and 2021, benefitting over 45,000 properties. The 2019 Coastal Risk Management Programme supported an additional £150 million of investment in response to climate change and the actions set out in the Shoreline Management Plans.

Resilient construction

Increasing numbers of new construction projects have flood resilience embedded from the outset. Guidance on resilient construction

is available through an **industry-led code of practice** for retrofitting and new builds, plus two relevant British Standards for resilient construction (BS85500:2015, due to be updated in winter 2021) and testing of resistance products (BS851188:2019).

Managing water flow

Across the UK, strategic use of dredging, reservoirs and barriers, plus the use of the local environment – through, for example, tree planting – are used to reduce flood risk.

The Department for Environment, Food and Rural Affairs is increasing the number of water management schemes within and across catchments to reduce flood risk and help manage drought risk. This includes looking at opportunities for any nationally strategic infrastructure and promoting actions which prevent and better manage the impacts of surface water flooding. This is outlined in the **flood and coastal erosion risk management policy statement**.

The Department for Infrastructure in Northern Ireland maintains over 500 kilometres of coastal and fluvial defences and 6,900 kilometres of designated watercourses.

The department also operates a structured watercourse maintenance regime.

The new **National Strategy for Flood and Coastal Erosion Risk Management in Wales** sets out the strategic approach and actions in managing risk from all sources. This strengthens policies on how the risk to communities will be managed over the next 10 years and the wider issues facing the Welsh population over the next century.

Within Scotland, the 32 local authorities maintain coastal and flood defences. The Scottish Government is developing policy improvements to increase Scotland's use of blue-green infrastructure for drainage and flood management.

Place-based resilience schemes

The UK government is providing £200 million over six years to help over 25 local areas in England to take forward wider innovative actions that improve their resilience to flooding and coastal erosion.

The Scottish Government has worked with the Property Flood Resilience Delivery Group and in 2019 launched an action plan

for delivering property flood resilience in Scotland.

The Department for Infrastructure in Northern Ireland currently has a regional programme of community engagement in over 30 local areas to improve their resilience to flooding. The department has also invested approximately £1 million in a Homeowner Flood Protection Grant Scheme.

The Welsh Government introduced a new Natural Flood Management programme in 2020 to further encourage its use and learn more about its benefits and limitations. Eligible projects receive 100% grant funding towards delivery and monitoring for the first two years.

Better predictions

Monitoring and forecasting systems

Sophisticated systems are used to anticipate flooding and provide early warning to areas likely to be affected. The UK's flood forecasting centre continues to improve the accuracy and communication of the advance warning information it provides to government and local responders.

National Flood Resilience Review

The review has improved the UK government's understanding of some of the worst plausible scenarios for coastal and river flooding.

Improved co-ordination

National Flood Response Centre

This collaboration between the Department for Environment, Food and Rural Affairs and the Civil Contingencies Secretariat in the Cabinet Office facilitates continuous cross-government situational awareness and rapid co-ordination of the central government response. This ensures effective decision-making in significant flooding emergencies.

Flood Risk Management Programme

The programme aims to reduce the likelihood and effects of flooding in England. Similar activity is conducted by all devolved administrations.

Flood Forecasting Centres

The centres are partnerships between the Met Office and the **Environment Agency** (alongside close collaboration and financial support from Natural Resources Wales), and the **Scottish Environment Protection Agency**. They bring together expertise on flood monitoring, forecasting and warnings. The Department for Infrastructure in Northern Ireland also works closely with the Met Office in managing flood risks.

Local resilience and preparedness

Local Resilience Forums in England and Wales, Regional Resilience Partnerships in Scotland, and Emergency Preparedness Groups in Northern Ireland **assess local flooding risks, develop contingency plans and review them.**



Useful information and advice

Bodies working hard to manage flood risks around the UK include:

- Met Office
- Environment Agency
- Scottish Environment Protection Agency
- Natural Resources Wales
- Northern Ireland Department for Infrastructure
- local authorities

There are a variety of free, easy-to-use tools to help individuals stay informed and protect themselves, their families, property and businesses. These include easily accessible online information regarding flood risk, weather alerts and warnings, and local river level alerts.

Live flood alerts are available by postcode:

- [live England flood alerts](#)
- [live Wales flood alerts](#)
- [live Scotland flood alerts](#)

The 24/7 Floodline offers advice on what to do before, during and after flooding:

- England, Wales and Scotland:
0345 988 1188
- Northern Ireland:
0300 2000 100



Additional online resources

- [Sign up for flood alerts by phone, text or email](#)

Flooding: Health guidance and advice

- [Check local flood risk](#)
- [Flood defences and coastal change](#)

Key flooding organisations by nation

- [Environment Agency \(England\)](#)
- [Scottish Environment Protection Agency](#)
- [Natural Resources Wales](#)
- [Northern Ireland Department for Infrastructure](#)

Severe weather

What's the risk?

The UK sits in the path of predominantly westerly winds where low pressure weather systems – and the clouds and rain that come with them – frequently move eastwards or north-eastwards across the North Atlantic and then across the UK. This typically brings unsettled and windy weather, particularly in winter. Summers in the UK are usually cooler than those on the European continent, whereas our winters are often much milder.

Climate change has already altered the risk of certain types of extreme UK weather and further changes are expected in the future. Extreme heat has become more likely, while the risk of extreme cold has decreased. Both of these trends are expected to continue over the coming decades. The evidence is less clear with regard to storms and droughts, but it does suggest that future storm risk will increase while future drought risk is uncertain. There is a trend toward wetter winters and drier summers, leading to an increasingly complex and challenging picture.

The government assesses the risk from four main types of severe weather:

- **storms** and **gales** with damaging wind speeds and possible lightning
- **low (sub-zero) temperatures** and **heavy snow** for prolonged periods
- **heatwaves** with high temperatures lasting several weeks, harming peoples' health
- **drought** as a result of a lack of rainfall over several years, leading to water shortages

Consequences of severe weather may include:

- fatalities and casualties (physical and psychological), particularly among vulnerable groups (such as older adults)
- evacuation and shelter of residents or employees of homes and businesses
- widespread damage to property and infrastructure
- disruption to essential services, particularly transport, water supply, energy and communications
- additional pressure on healthcare
- environmental damage

Have such events happened before?

Examples of severe weather events include:

- a storm on 16 October 1987, which brought down 15 million trees in south-east England and caused dozens of deaths
- the 'Burns Day' storm on 25 January 1990, which killed 47 people across the British Isles
- the 'St Jude's Day' storm on 28 October 2013 which caused four deaths as a result of falling trees, severe disruption to transport and left more than 850,000 homes without electricity

The October storms caused significantly more damage to trees as they still held their leaves, making it easier for strong winds to damage or uproot them.

In late February and early March 2018, the UK experienced a spell of severe winter weather with very low temperatures and significant snowfall. This event became known as 'The Beast from the East' in the media and led to widespread impacts across the UK.

Roads were closed, numerous road traffic collisions happened, and hundreds of cars were stranded overnight in both Scotland and England, including on the A31 in Hampshire and the M80 in Scotland. Rail services were also severely disrupted with numerous services cancelled, and in some instances passengers found themselves stranded on trains in between stations. The impact on air transport was evidenced by Glasgow Airport's closure on 28 February.

Thousands of schools across the UK were closed, and many areas suffered power cuts. Isolated communities and farms across the North Pennines received supplies by helicopter. Tragically, one individual died after falling into a frozen lake in a London park.

In August 2003, a UK heatwave lasted 10 days and resulted in over 2,000 deaths. Temperatures reached what was then a record 38.5°C in Faversham, England and 33°C in Anglesey, Wales. High temperature records are now being broken across the UK with increasing frequency, most recently in 2019 when a temperature of 38.7°C was recorded in Cambridge.

Over the past 40 years or so, England has experienced five long-duration droughts (lasting over 6 months) and two shorter periods of drought. Drought in the other UK nations is rare. During the 2010–12 drought, parts of south-east and eastern England recorded their lowest 18-month rainfall total in over 100 years. Temporary hosepipe bans were applied to 20 million customers, and the environment and agricultural sectors were disrupted. Drought has the longest advance warning times of the severe weather types.

What's being done about the risk?

Forecasting

Met Office

The Met Office provides 24/7 weather coverage and forecasting across the UK.

Collaborative monitoring

The Environment Agency, Scottish Environment Protection Agency, Natural Resources Wales and the Northern Ireland Department for Infrastructure work hard to predict and monitor severe weather. Links to information sources are at the bottom of the next page.

Publicly-available guidance

Warnings

The Met Office uses a colour-coded system to show the likelihood and impact of expected severe weather.

High temperatures

As part of Public Health England's **Heatwave Plan for England**, the 'Heat-Health Watch' service in England provides an alert when temperatures are expected to rise significantly. Advice and guidance for each UK nation is available below.

Cold weather

As part of Public Health England's **Cold Weather Plan for England**, the 'Cold Weather Alerts' service in England provides alerts when the average temperature is forecast to fall below a certain level. It also alerts the public when heavy snow or widespread ice is forecast. Advice and guidance for each UK nation is available below. There's also additional **cold weather guidance for Wales**.

Campaigns

Government public information campaigns such as '**WeatherReady**' 'Get ready for winter' and '**Ready Scotland**' give tailored advice, particularly for vulnerable people. The public health agencies in each UK nation may also employ bespoke campaigns during severe weather events.

Severe weather planning and response

Local and central government work with infrastructure operators and emergency responders to develop response plans, so they can deal with potential damage and restore utilities and travel routes as quickly as possible. Where the demand for resources outstrips what is available, military support may be requested under Military Aid to the Civil Authorities ('MACA') arrangements.

Drought planning

Water companies have a statutory duty to plan for drought, and their plans include a range of actions to manage the supply and demand of water. The Environment Agency also has a drought response framework which sets out how the agency works with the government, water companies and others to manage water resources during a drought in England. Natural Resources Wales maintains plans for dealing with droughts in Wales, as does the Scotland Environmental Protection Agency in Scotland. Northern Ireland Water prepare a 'Water Resource and Supply Resilience Plan' every six years.

Emergency Drought Orders

To protect essential water supplies, legislation allows restrictions to be phased in, starting with non-essential water uses such as watering a garden with a hosepipe.

The effects of a drought on North Yorkshire, 1995.





Useful information and advice

When severe weather is forecast, the Met Office will issue warnings using the National Severe Weather Warning Service. These warnings, along with **other weather forecasts**, give the latest information about where and when severe weather can be expected. They also describe some of the impacts that may occur.

In particular, the public should look out for information on named storms. A storm will be named when it has the potential to lead to notable impacts. The Met Office UK Storm Centre has more information on **Storm Naming**.

Weather warnings, forecasts and general advice about **how to prepare for severe weather** can be found on the Met Office website.

The 24/7 Met Office Weather Desk can offer more information: 0370 900 0100.

Severe space weather

What's the risk?

The term 'space weather' describes a series of phenomena originating from the sun. The three key phenomena that lead to most space weather impacts are:

- **solar flares** – the energy from these reaches Earth within a few minutes and can cause radio blackouts
- **solar energetic particles** – these arrive at Earth around 15 minutes to a few hours after they occur, and cause solar radiation storms which can potentially harm astronauts and impact electronics
- **coronal mass ejections (CME)** – travelling slowly, CMEs can take between 14 hours and up to four days to reach Earth, and cause geomagnetic storms with many impacts including localised disruptions to power grids

Consequences of space weather may include:

- localised power outages
- loss or disruption of services reliant on satellite-enabled technologies

- temporary outages of on-board satellite electronics and possible damage to (or total failure of) satellites, which would disrupt satellite television broadcasts and reduce the accuracy of weather forecasts
- disruption to essential services, particularly transport, retail finance, energy and communications
- increases in radiation doses high in the atmosphere and in space

Have such events happened before?

Day-to-day space weather causes the Aurora Borealis (the Northern Lights) in polar regions, but strong geomagnetic storms deflect these further south and bring with them disruption to many vital technologies.

The Carrington Event in 1859 is the largest space weather event since modern records began. Telegraph systems were heavily disrupted and the Aurora Borealis was sighted as far south as Mexico, the Caribbean and Sub-Saharan Africa. A solar storm of similar magnitude was measured by a NASA satellite in July 2012, when the storm's path narrowly missed the Earth.

Did you know?

The Earth creates a magnetic field around our planet called the magnetosphere. The magnetosphere protects us from harmful radiation in the manner of a planetary shield. Solar flares, energetic particles or CMEs can hit the magnetosphere, and this interaction can disrupt technologies such as electricity networks and services that rely on communication with, or are enabled by, spacecraft.



Day-to-day space weather causes the Aurora Borealis (the Northern Lights).

Did you know?

Orbiting satellites are particularly vulnerable to space weather effects and can be damaged or temporarily disabled. Even if satellites continue to operate correctly, their signals may not reach the ground due to the effects of space weather on the atmosphere. This would impact many systems key to our society, including communications, navigation, accurate timing, satellite television and observation of the Earth (e.g. for weather forecasts).

A smaller storm in 1989 tripped the equipment protection systems of the Hydro-Québec electricity network in Canada, resulting in a loss of power for nine hours across the province. It affected millions of homes and businesses as well as the means to travel safely, due to its impact on rail services and traffic lights on roads.

Another solar storm in 2003 caused the UK aviation sector to lose some GPS functions for a day. This led to disruption and some significant delays, particularly on flights to the USA, where the same storm caused a widespread aviation navigation outage of 30 hours.

Records from other severe solar storms in 1921, 1960 and 1967 describe widespread radio disruption and impacts on railway signalling and switching systems.

What's being done about the risk?

Pre-event

Understanding

The **Royal Academy of Engineering report on Extreme Space Weather**, published in 2013, analysed potential impacts of space weather on the UK's infrastructure and is being used to inform measures to reduce the risk. The report will be updated by 2024, as part of the £20 million government-funded Space Weather Innovation, Measurement, Modelling and Risk (SWIMMR) programme.

Strategy

The government's **Space Weather Preparedness Strategy**, published in 2015, sets out the risk to the UK from extreme space weather.

System resilience

More resilient transformers have been introduced in the electricity grid to reduce the risk of failures. However, the expansion of small satellite constellations that use cheaper commercial components, together with increased reliance on space-enabled technologies, are likely to be increasing risks in some areas. These risks need to be better understood, and further research is needed to inform effective planning and mitigation strategies.

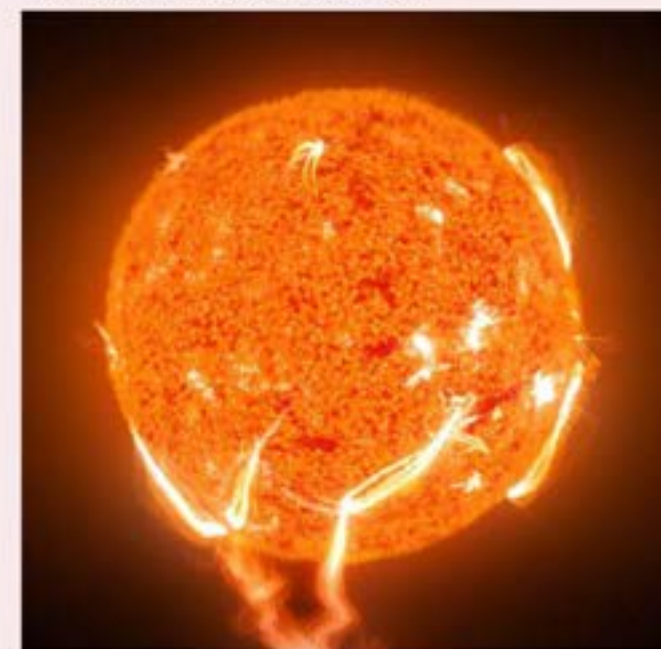
Forecasting by the UK

The Met Office Space Weather Operations Centre provides a 24/7 forecasting, warning and alerting service that covers a range of space weather phenomena and events. The SWIMMR programme, already underway, will enhance the Met Office Space Weather Operations Centre capabilities.

Forecasting by partners

The UK works closely with international partners to share information and knowledge. We have key relationships with the **National Oceanic and Atmospheric Administration Space Weather Prediction Center** in the USA and within the **PECASUS** consortium for services to international aviation. UK investment into the European Space Agency Space Weather activities increased to around £20 million per year from 2019. The majority of this funding will be used to work with international partners on projects that will improve space weather forecasting, such as the **Solar Orbiter research mission** and plans for a vital dedicated **space weather monitoring satellite**.

This image shows a CME leaving the sun.





Useful information and advice

Find out how to prepare for a power cut and what to do if one occurs using the information on page 68.

In the event of a severe space weather event, access to and reliability of many modern enabling technologies may be compromised for days or weeks. It may be useful to make plans and preparations that mitigate the need for access to technology and anticipate disruption to transport, satellite-enabled navigation, timing and communication services and energy.

Since the millennium, society has come to rely heavily on accurate navigation and timing services from GPS and other global navigation satellite systems, evidenced in the 2018 **Blackett Review**. Businesses heavily reliant on these services should explore backup options in the event of an unlikely outage. These options may range from simple actions such as using a map, to engagement with the **National Timing Centre programme for resilient timing**.



Additional online resources

- [Met Office – What is space weather?](#)
- [Royal Academy of Engineering 'Extreme Space Weather' report](#)
- [Space Weather 'Public Dialogue' report](#)
- [Health protection guidance](#)
- [Government Space Weather Preparedness Strategy](#)



The Fuego volcano outside Antigua, Guatemala erupted on February 27, 2016.

Volcanic eruptions

What's the risk?

There are a number of volcanoes across Europe that could affect the UK, such as Santorini in the Aegean Sea and Vesuvius in Italy. However, volcanoes in Iceland (such as Bárðarbunga and Eyjafjallajökull) are of most concern because they are close to the UK, erupt frequently and – due to prevailing winds – are more likely to blow ash and gas towards us.

Consequences of volcanic eruptions may include:

- casualties (from poor air quality)
- disruption to essential services, particularly transport
- economic damage as disruption to air travel affects business and tourism
- environmental contamination, particularly to water and agriculture

There are two types of volcanic eruption. 'Explosive' eruptions happen when thick magma reaches the surface of the volcano. This prevents gases from escaping, which

build in pressure until they eventually explode, blasting magma and rock into the atmosphere in a cloud of ash, gas and other particles. Volcanic ash clouds can affect jet engines and therefore disrupt air travel. The second type, 'effusive' eruptions, happen when large quantities of gases are able to escape freely. Both types of eruption can potentially lead to long periods of air pollution affecting people's health, particularly if they suffer from existing respiratory conditions. These incidents can also have a damaging effect on crops.

Have such events happened before?

In April 2010, a relatively small explosive eruption of Eyjafjallajökull in Iceland coincided with north-westerly winds, resulting in disruption to air travel across much of the UK and Northern Europe for six days.

The 1783–84 Laki eruption from Grimsvötn in Iceland was an effusive eruption, releasing significant levels of sulphur dioxide, chlorine and fluorine over several months. This caused visible pollution (in the form of a 'dry fog') across the UK and Northern Europe, mass crop failure and thousands of deaths.

What's being done about the risk?

Pre-event

Collaboration

The International Airways Volcano Watch consists of nine Volcanic Ash Advisory Centres located around the world. These centres provide information on the movement and spread of volcanic ash. The London centre covers Iceland and the Jan Mayen Islands, working closely with the Icelandic Met Office.

Understanding and regulation

The aviation industry and regulators have improved their understanding of volcanic eruptions and how best to deal with them. Better data on how ash interacts with jet engines has enabled a new regulatory regime to be put in place since 2010. This allows airlines to fly in low ash concentrations and (in consultation with their airframe and engine manufacturers) to submit a safety case to the Civil Aviation Authority to fly safely in medium- and high-ash zones.

Improved observation

The Met Office has a UK-wide light detection and ranging (LIDAR) network, which uses:

- the capability to detect ash from the ground
- significantly improved satellite information

to provide data on ash-cloud and particulate matter. This provides confidence in forecast information for airlines and air traffic management. Long and short-term options for alternative arrangements to a test aircraft for an airborne volcanic ash capability are being explored. These arrangements would be a replacement for MOCCA – the Met Office Civil Contingencies Aircraft.



Useful information and advice

The health effects of this risk are covered under poor air quality, which can be found on the next page.

For people flying to northern Europe, reports or warnings of volcanic activity and guidance (including information on flights) will be available on the **London Volcanic Ash Advisory Service**.

Specific information on potential air closures and further information can be found on the **Civil Aviation Authority website**. Travel providers can provide more relevant information on individual flights.



Additional online resources

- **Iceland Met Office**
- **Smithsonian Institution – volcanoes of the world database**
- **British Geological Survey**
- **Civil Aviation Authority safety projects**

Poor air quality

What's the risk?

Air quality has improved significantly over recent decades – however, air pollution remains the largest environmental risk to UK public health, and shortens lifespans.

This risk summary does not cover typical day-to-day air pollution. The focus here is on short-term surges in air pollution levels.

Short-term surges in poor air quality occur primarily due to weather conditions preventing pollution from dispersing. These conditions include low winds, or a layer of warmer air trapping colder air close to the ground (known as 'temperature inversion'). Air quality is also worsened by the ultraviolet light from sunshine, as it reacts with the air to generate ozone.

Consequences of short-term exposure (over hours or days) to a high air pollution episode may include:

- exacerbation of pre-existing health conditions, such as asthma
- adverse effects on lung function
- coughing, wheezing and shortness of breath
- increases in respiratory and cardiovascular hospital admissions and fatalities
- pressure on healthcare, particularly hospital referrals and demands on ambulances
- environmental damage
- economic damage

Poor air quality is a risk to everyone's health, but it particularly affects:

- people with existing heart or lung conditions (such as asthma)
- pregnant women
- children
- older adults
- people who live in areas of higher pollution, for example in communities close to busy roads
- low-income communities (research has demonstrated that higher concentrations of nitrogen dioxide and PM10 have been observed in low-income communities)

The same vulnerable groups are also at an increased risk of severe illness from COVID-19. There is however, currently no clear evidence to suggest that air pollution has a direct link to the spread or severity of novel coronavirus.

Have such events happened before?

Between 27 June and 7 July 2006, and between 13 and 23 July of the same year, the UK experienced two periods of extended hot weather with associated elevated ozone and harmful airborne particles. In the first episode, the combination of heatwave conditions, poor air quality and worsening of people's pre-existing conditions led to up to 540 deaths and up to 700 hospital admissions. The same factors led to up to 630 deaths and up to 830 hospital admissions in the second episode.

Periods of elevated pollution over a widespread area, and lasting more than two days, can occur around 5 to 10 times a year dependent on seasonal weather conditions. A five-day air quality forecast service is available on [the Department for Environment, Food and Rural Affairs' UK Air website](#), along with the latest real-world measurements. The yearly [Air Pollution in the UK report](#) documents these pollution episodes.

What's being done about the risk?

Reducing likelihood

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Reducing pollutants

The government set out commitments to tackle all sources of air pollution and improve air quality for all through the [Clean Air Strategy](#), which was published in January 2019. The UK government has also published a [revised air quality plan](#) for tackling nitrogen dioxide emissions in urban areas.

Reducing the impact

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Forecasting

[Air quality forecasting](#) is provided daily for the entire UK.

Health advice

The Department for Environment, Food and Rural Affairs provides health advice associated with each step of the [Daily Air Quality Index](#), in consultation with the [Committee on the Medical Effects of Air Pollution](#). Their [air quality Twitter page](#) also provides updates and information during periods of elevated pollution.



Air pollution remains the largest environmental risk to UK public health.



Useful information and advice

Reducing exposure to air pollution is especially important for at-risk groups or those with a history of experiencing pollution-related health problems.

The Met Office and the Department for Environment, Food and Rural Affairs both provide health advice on their websites. Anyone with pre-existing conditions should follow their doctor's advice about exercising and managing their condition on high and low air pollution days, and take simple precautions such as carrying an extra inhaler.

The daily pollution forecast provides advance warning about poor air quality.

The Department for Environment, Food and Rural Affairs' UK air website provides current and forecast levels of air pollution and associated health advice.

More updates are available at @DefraUKAir on Twitter or the free air pollution hotline: 0800 55 66 77.

Register online for air quality forecasting services such as AirText in London, airAlert in Sussex and Know and Respond in Scotland.

It may also be useful to read about the long-term **health effects of poor air quality**.



Additional online resources

- [Clean Air Strategy 2019](#)
- [UK Air Daily Air Quality Index](#)
- [UK Air Pollution Forecast](#)
- [Met Office Air Pollution](#)
- [UK Air Quality Plan for Nitrogen Dioxide](#)

Earthquakes

What's the risk?

Earthquakes in the UK are moderately frequent but rarely result in large amounts of damage. An earthquake powerful enough to inflict severe damage is unlikely. Damage from UK earthquakes is likely to be greatest in historic buildings such as churches, monuments and Victorian or Edwardian terraced housing. The risk of damage will be greatest closest to the epicentre and will decrease with distance.

Consequences of an earthquake may include:

- fatalities and physical and/or psychological casualties
- potential evacuation and shelter of affected individuals
- damage to property and infrastructure, particularly to older buildings
- minor disruption to essential services such as water, electricity, telecommunications and transport networks

Have such events happened before?

Major Earthquake incidents in the UK are rare. A large earthquake occurred in 1931 near Dogger Bank, 60 miles off the east coast of England. The intensity of the earthquake was low, with buildings in Hull suffering only minor damage as the epicentre was a long way away.

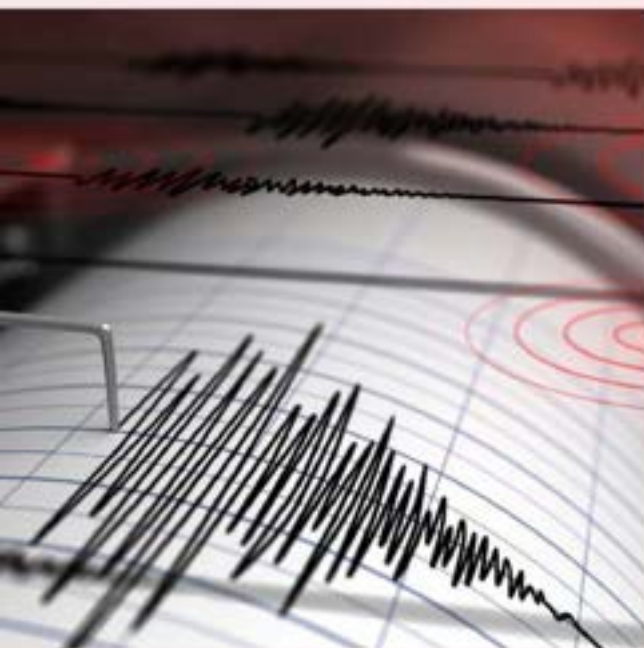
The largest UK earthquake in terms of intensity occurred in 1884 in Colchester, Essex. Approximately 1,200 buildings required repairs to collapsed walls, chimneys and roofs.

On 28 April 2007, a very shallow earthquake occurred near Folkestone, Kent, resulting in power outages, transport disruption and widespread superficial damage.

Other high-intensity earthquakes have occurred in the Dover Straits (in 1382 and 2007), south Wales (in 1727, 1775, 1832, 1868 and 1903), the Midlands (in 1816, 1924 and 1957), and Inverness (in 1816, 1890, and 1901).

Did you know?

The thin outer shell of the Earth is made up of different segments called tectonic plates, and the motion of these plates causes stress to build up in the Earth's crust. Earthquakes are the result of sudden movement along faults within the crust that releases stored-up stress. The stress is released in the form of seismic waves that spread through the Earth and cause the ground surface to shake. Earthquake activity is greatest at the plate boundaries, all of which are far away from the UK. However, the stress exerted at the edges of a plate still affects the plate's interior, so earthquakes can occur anywhere. These are referred to as intraplate earthquakes and are less frequent than those at plate boundaries.



Seismologists use probability-based estimates of ground shaking over long periods of time to plan for the effects of earthquakes.

What's being done about the risk?

Regulations

Sensitive structures

Certain critical buildings such as power stations and nuclear sites are subject to earthquake-resistant design requirements and other existing obligations.

Studies

Seismic hazard studies

Studies are sometimes carried out for non-sensitive infrastructure.

Projects

Research

Research is ongoing into the nature and driving forces of UK earthquake activity.

National seismic hazard maps

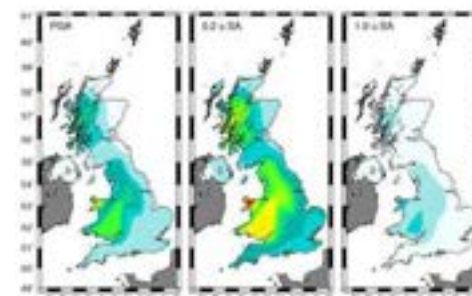
These maps provide an overview of the likelihood of different levels of ground shaking.

Forecasting

Models and forecasts

Seismologists cannot currently predict when and where an earthquake will occur. However, probability-based estimates of ground shaking over longer periods of time (such as 50 to 100 years) can help plan for the effects and inform building design. There are several models and forecasts which have been developed for the UK.

Seismic risk mapping



Blue to green shading represents areas of comparatively low hazard, yellow to orange shading represents areas of moderate hazard, and red to purple shading represents areas of high hazard. Mapping courtesy of **British Geological Survey Open Report, OR/20/053**.



Useful information and advice

Although serious earthquakes are unlikely in the UK, it can still be useful to know what to do before, during and after an earthquake, especially if individuals are likely to visit to an earthquake-prone country. Travellers should familiarise themselves with the local advice for the country they are visiting.

It is always worth researching the safety practices and escape routes from residences and workplaces.

If indoors during an earthquake, the general advice is to drop to the ground and take cover, preferably under a table or desk, with an arm or hand covering the face and neck. Stay away from any large or loose items or furniture that could fall.

If in a car, it is best to pull over and stay put, away from structures and powerlines.

Anyone caught outside during an earthquake should not run. Instead, they should drop to the ground and cover their face and neck, preferably staying away from structures, trees and powerlines.

Following an earthquake, individuals should check properties and domestic utilities for any damage. If there's any uncertainty, evacuate and seek advice from an expert. Beware of any fallen masonry or trees. Check government and emergency service updates for information about damage to local infrastructure (such as roads and bridges) and whether any evacuation or rest centres are open.



Additional online resources

- [A synopsis of the European Macroseismic Scale](#)
- [What is the seismic hazard in the UK?](#)
- [Earthquakes around the British Isles in the last 50 days](#)
- [Geohazard notes](#)

Human and animal health



Human diseases

What's the risk?

Infectious diseases in humans take a variety of forms. Some have the potential to cause significant public health impacts, due to the number of people they might affect in a short space of time, and the severity of their symptoms. Possible scenarios range from significant outbreaks of 'containable' infectious diseases, which spread slowly and / or can be more easily delayed or stopped but may have a high fatality rate, through to pandemics such as COVID-19, where the whole population is at risk from a highly infectious virus, which can cause large numbers of fatalities in certain groups.

Pandemics are the result of a new human virus emerging and spreading around the world and have occurred at infrequent and unpredictable intervals throughout human history. Their global impact has ranged from severe (influenza 1918 and COVID-19) to mild (influenza 2009). In the last century, more pandemics have been attributable to viruses

than to bacteria, with the most common being pandemic influenza (flu) and another being Human Immunodeficiency Viruses (HIV). However, earlier historical records show more bacterial pandemics such as bubonic plague. The current pattern may change again in the future.

Flu pandemics are natural events that happen when a new flu virus emerges, most likely from the animal kingdom, that few – if any – people are immune to. There are important differences between 'ordinary' seasonal flu, which happens every winter, and pandemic flu. In a pandemic, the new virus has the potential to spread quickly and cause more serious illness in a large proportion of the population due to the lack of immunity. In contrast, the impact of seasonal flu varies due to changes in the circulating strain in each year. As there have been four flu pandemics in the last 100 years, there is a high probability of another flu pandemic occurring, but it is impossible to predict when it might happen, or exactly what it would be like. Unlike seasonal flu, which occurs during winter, a flu pandemic could emerge at any time of the year.

The impact of seasonal flu varies due to changes in the circulating strain each year.



Other emerging infectious diseases (new, or newly recognised, diseases) could also cause large numbers of people to fall ill, leading to significant impacts on society. New infections have emerged in the human population at regular intervals during recent decades and they can be difficult to detect, diagnose and treat when they first appear.

In terms of likelihood and impact, the risk of a new infectious disease other than COVID-19 spreading across the UK is currently assessed to be lower than that of a flu pandemic. Flu has been the most common cause of respiratory pandemics in the last 100 years, however other respiratory diseases such as SARS (Severe Acute Respiratory Syndrome) have spread significantly. It is also possible that more than one pandemic could occur at the same time – for example, a new flu strain may emerge during the COVID-19 pandemic. While the emergence of the two diseases would be independent of one another, their impact on society and essential services would be compounded.

Some recently-emerged diseases are classified as High Consequence Infectious Diseases or HCIDs. These are very infectious diseases which typically have a high fatality rate, or the ability to spread rapidly, with few – or no – treatment options. HCIDs are regularly monitored and are less likely to cause a pandemic but could lead to significant outbreaks.

Ways of catching infectious diseases include, but are not limited to:

- respiratory (airborne from one infected person to another)
- vector-borne (spread to humans via a third-party species such as a mosquito)
- blood-borne (spread between humans via exposure to infected blood or blood products)
- food-borne (spread by contaminated food or water)
- sexual transmission
- infection from mother to child before birth

It is difficult to forecast the spread and impact of a new disease until it arrives in the UK and starts circulating. However, possible consequences may include:

- for **pandemics**:
 - up to half of the population may fall ill during a flu (or flu-like illness) pandemic, potentially leading to up to hundreds of thousands of deaths across the UK
 - significant numbers of deaths, potentially across multiple waves, during a future pandemic caused by another novel virus (not a flu or a flu-like illness)
 - significant disruption to all sectors of society (e.g. education and businesses)
- for **HCIDs**:
 - thousands of people experiencing symptoms, potentially leading to hundreds of deaths
 - some disruption to essential services, including health and education

Have such events happened before?

There were four influenza pandemics in the 20th century. The most recent flu pandemic was the H1N1 strain (swine flu) pandemic in 2009 which caused at least 18,500 deaths worldwide. In 1918, another variant of the same H1N1 strain (Spanish flu) killed over 50 million people globally.

Other flu strains exist that have the potential to cause a pandemic, such as H7N9 (avian or bird flu). This strain has caused over 1,500 human cases, and hundreds of deaths in Asia since moving from poultry into the human population. However, there has recently been a large drop-off in the number of people being infected.

Over the past 30 years, more than 30 new, or newly recognised, diseases have been identified. Most of these have been zoonoses – diseases that are naturally transmissible, directly or indirectly, from animals to humans. Examples of new infections that have emerged in the human population include COVID-19 (which led to tens of thousands of deaths during 2020 in the UK), HIV and

HCIDs, such as Ebola, SARS, Middle East Respiratory syndrome (MERS), and Zika virus.

What's being done about the risk?

Pre-event

Planning

The UK government is taking an evidence-based approach to prepare for the next influenza pandemic. Contingency plans exist for many emerging infectious diseases, and the UK government is continually learning the lessons from previous infectious disease outbreaks, including COVID-19, to inform preparation for future infectious disease outbreaks and pandemics.

Co-ordination

UK government departments, devolved administrations, public health agencies and the NHS share plans and information.

Testing our preparedness

Preparedness plans are regularly reviewed to ensure they reflect the latest expert advice. One way of ensuring our plans are fit for purpose is through stress-test exercises, which are run both locally and nationally

across government, the public sector, and various parts of the health system. Exercises are also useful to identify good practice, share new ideas and identify potential gaps or issues within the planned response.

International collaboration

The UK government collaborates with other governments to work on prevention, detection and research. The UK is also a member of the World Health Organization, which provides member states with strategic guidance, technical support and co-ordination of activities through its influenza programme and other health security activities.

Response

Detection

The UK has specialist epidemiology and microbiology capabilities to identify, characterise and respond to infectious diseases. This is followed by ongoing, scalable, testing capabilities and capacity to support the ongoing response to an infectious disease outbreak or pandemic (for example, the expansion of COVID-19 testing from 2,000 a day in March 2020 to 500,000 a day in November 2020).

Clinical countermeasures

The government stores clinical countermeasures including medicines (such as antiviral medicines, which can treat flu symptoms, and antibiotics for complications such as pneumonia), and consumables such as needles.

Vaccines

Not every virus is preventable with a vaccine. However, where possible, vaccines will be developed at the earliest opportunity once new viruses are identified. For influenza, where arrangements to access a vaccine are in place, it is anticipated that it will take at least four to six months after a pandemic begins before a vaccine becomes available. Vaccines for other new viruses may take longer to develop.

Personal Protective Equipment (PPE)

Emergency responders have access to PPE for severe pandemics and infectious diseases. There are also protocols in place for infection control both before and during an incident.

Surge plans

Tried and tested surge plans exist to increase secondary care capacity and mechanisms to reduce pressure on primary care services (e.g. establishing the Nightingale hospitals to ensure capacity is available during the COVID-19 pandemic).

Societal measures

Information to explain how the public can protect themselves and access services, social distancing measures and interventions are targeted at specific sectors and industries.

Support for individuals and business

The case for measures to support individuals and business would be considered.

Case study: COVID-19

Background

COVID-19 emergence

On 30 January 2020, the WHO Director General declared that the outbreak of COVID-19 constitutes a Public Health Emergency of International Concern (PHEIC). The WHO subsequently declared the COVID-19 outbreak to be a pandemic on 11 March 2020.

About COVID-19

Coronaviruses are a large family of viruses with some causing less severe disease, such as the common cold, and others causing more severe disease, such as Middle East respiratory syndrome (MERS).

Some people infected with COVID-19 only experience mild symptoms, or no symptoms at all, and the majority of people infected begin to recover within about seven days from the onset of symptoms. A minority remain unwell after seven days and may start to deteriorate. Severe cases of COVID-19 can result in death.

Spread to the UK

The first case of COVID-19 was confirmed in the UK on 31 January 2020. The virus causing COVID-19 was imported into the UK by travellers from other countries. Subsequent transmission of the virus within the UK has, as at 15th December 2020 resulted in 1,888,116 confirmed cases of COVID-19, leading to 76,287 deaths (measured as deaths with COVID-19 on the death certificate).

How has HMG responded?

The UK has world-leading capabilities to address significant biological risks and invests hundreds of millions of pounds a year in protecting against and preparing for disease outbreaks and biological incidents. We have undertaken significant preparedness work for an influenza pandemic, including:

- **Planning** – the UK Influenza Pandemic Preparedness Strategy covers strategic planning, response and scientific evidence for many emerging infectious diseases.
- **Coordination** – Government departments, devolved administrations, public health agencies and devolved NHS branches share plans and information.
- **Surveillance** – via mandatory notification of disease by medical practitioners or laboratories.
- **International collaboration**
- **Detection** – specialist epidemiology and microbiology capabilities exist within the UK to identify, characterise and respond to infectious diseases.
- **Antivirals** – the Government stockpiles enough antiviral medicines to help treat people showing symptoms during an influenza pandemic.
- **Vaccines** – vaccines will be developed as soon as possible once new influenza strains are identified.
- **Personal protective equipment (PPE)** – emergency responders have personal protective equipment for severe pandemics and infectious diseases.

Our plans have been regularly tested and updated locally and nationally. This preparation and experience provided the basis for rapid action at the beginning of the global COVID-19 outbreak, as set out in the **Coronavirus Action Plan**, which was published on 3 March 2020. The objectives at this early stage were to **contain** – detect early cases, follow up close contacts, and prevent the disease taking hold in this country for as long as was reasonably possible – **delay** – slow the spread of the virus in this country – and **research** – better understand the virus and how to lessen its effect on the UK population; innovate responses including diagnostics, drugs and vaccines; use the evidence to inform the development of the most effective models of care.

The UK Government began taking action in January prior to any cases entering the UK and before the WHO declared a PHEIC. The Health Secretary first made a statement to update Parliament on the steps the Government was taking in response to COVID-19 on 23 January.

Actions taken included:

Early response

- From the outset of the UK COVID-19 outbreak, numerous crisis response mechanisms across government were activated. This included the stand up of Official and Ministerial forums to monitor, manage and respond to the crisis as it unfolded.
- Public Health England (PHE) was one of the first in the world to rapidly develop a highly sensitive test for the COVID-19 virus. Once a case was detected, our public health agencies used tried and tested procedures for rapid tracing, monitoring and isolation of close contacts, with the aim of preventing further spread
- Each of the UK's national public health agencies worked with Border Force, port operators and carriers to enhance port health measures.
- Worked with WHO, the Global Health Security Initiative (GHSI), the European Centre for Disease Prevention and Control (ECDC), and other countries bilaterally and through G7 and G20, in supporting international efforts to detect the emergence of a pandemic and early assessment of the virus by sharing scientific information.
- DHSC, Border Force and the Foreign, Commonwealth and Development Office (FCDO) assisted the repatriation of British nationals and their dependants from affected areas overseas.
- Regulations introduced in England under public health legislation provided new powers for medical professionals, public health professionals and the police to allow them to detain and direct individuals in quarantined areas at risk or suspected of having the virus.
- During this phase patients diagnosed with COVID-19 in the UK were cared for by specialist units with expertise in handling such cases, using tried and tested infection control procedures to prevent further spread of the virus.
- Comprehensive economic support packages were rapidly developed to cope with the significant disruption to lives, jobs and livelihoods caused by the pandemic.
- In February and March, the UK government invested £24.6 million into 27 COVID-19 research projects via a joint rapid research call between UK Research

and Innovation and the National Institute for Health Research.

As the outbreak worsened the government response has escalated. The COVID-19 **Winter Plan** sets out a cross-Whitehall strategy to Spring 2021 to suppress the virus, protect the NHS and vulnerable, keep education and the economy going, and provide a route back to normality. Within the health and care sector, the primary objectives have been to contain and control – limiting virus spread to reduce impact on public health, the NHS and social care – and care and protect – ensuring capacity and supply in the NHS and social care to provide care, maintain resilience and support development of a vaccine. This has been achieved in close collaboration with partners including local authorities.

Actions taken include:

NHS resilience and recovery

- Building on existing plans to expand services to respond to a surge in demand by reprioritising facilities, changing the use of NHS buildings, expanding telemedicine

services (including investing £24 million to increase NHS 111 call handling capacity in England), working with the independent sector to create additional capacity and rapidly build temporary hospitals such as the Nightingale units to ensure that, if required, capacity exists in the NHS to care for patients with coronavirus, as well as other patients who may need urgent and emergency treatments, to prevent the pandemic overwhelming the NHS. 47,000 former professionals have joined the temporary register and over 25,000 healthcare students joined the NHS early. Launching the NHS Volunteer Responders programme – supporting 100,000 people to deliver almost 1 million tasks.

Social care resilience and minimising transmission

- Publishing COVID-19: Our Action Plan for Adult Social Care in April 2020, setting out the government's plan for controlling the spread of infection in care settings, supporting the workforce, maintenance of people's independence, people at the end

of their lives and local authorities and the providers of care.

- Publishing an Adult Social Care Winter Plan, which set out measures to prevent and contain the virus, including increasing the Infection Prevention and Control funding and providing free PPE for COVID-19 needs to care homes and domiciliary care providers until the end of March 2021.
- As of December 2020, £1.1 billion has been provided to implement infection prevention and control measures. This is in addition to the £4.6 billion that has been made available to local authorities in England to address pressures on local services caused by the pandemic, including adult social care.
- Establishing a taskforce for the social care sector whose membership consisted of leaders from every part of the social care sector and across government. Its **report** sets out the progress and learning from the first phase of the COVID-19 pandemic in informing advice and recommendations to government and the social care sector.
- Appointing a new Chief Nurse for Adult Social Care to represent social care

nurses and provide clinical leadership to the workforce over winter 2020/21.

- Introducing regular testing across care homes in England, which helps to identify and contain outbreaks.
- Launching the Adult Social Care COVID-19 Dashboard to help local authorities monitor outbreaks and infection prevention measures

Supply and distribution of key products

- Ensuring availability of all critical products, including PPE, medicines and ventilators. Amid unprecedented global pressures on supply chains, delivering over 4 billion items of PPE to the frontline and ordering over 32 billion items of PPE for the health and social care sector. Through the **Ventilator Challenge** over 14,000 additional ventilators were produced in the UK in around three months to support the increase in NHS intensive care capacity.
- Securing stocks of dexamethasone and other potential therapeutics to cover projected demand and continuing to procure critical supportive medicines for the treatment of COVID-19 as an

'insurance policy'. Ensuring the supply of critical medicines as the EU transition period ends and building a 4-month stockpile of PPE.

NHS Test & Trace

- Expanding systems and deploying new testing technologies to increase COVID-19 testing capacity across the UK and our contact tracing capability. In England, this includes the creation of NHS Test and Trace and the NHS COVID-19 App. These developments improve our ability to track COVID-19 infections, contact persons who may otherwise have unknowingly spread coronavirus and to save lives.
- We have increased test capacity from 2,000 per day in March to more than 500,000 per day in November and deployed new testing technologies like rapid-turnaround lateral flow tests. This will support the strategic objective of delivering rapid turnaround mass testing to target key groups and geographies such as schools, universities, cities and regions. The government is working with local Directors of Public Health to ensure

that local authorities play a key role in helping deploy testing in ways that reach people most at risk of having the virus and those working in settings where there is the highest risk of transmission.

- Establishing the **Joint Biosecurity Centre** in May 2020, bringing together data science, assessment and public health expertise to provide analysis and insight on the status of the COVID-19 epidemic in the UK. The Joint Biosecurity Centre supports decision-makers at a local and national level to take effective action in response to COVID-19.

Vaccines and treatments

- Playing a leading role in global efforts to research, produce, and deploy an effective and widely available vaccine as quickly as possible. Seven candidates have been secured across four different vaccine types to ensure the UK has adequate supply should any prove safe and effective, including 40 million doses of the Pfizer/BioNTech vaccine and 5 million doses of the Moderna vaccine. The government has invested significantly to scale up our manufacturing capabilities to

ensure we can manufacture a successful vaccine in large quantities.

- The independent Medicines and Healthcare products Regulatory Agency (MHRA) has authorised Pfizer/ BioNTech's Covid-19 vaccine for use. Government is making it available across the UK, following the Joint Committee on Vaccination and Immunisation advice to vaccinate those most at risk first, and those who work closest with them. 800,000 doses of the vaccine are being dispensed in the weeks following the first vaccination on 8th December, and more will follow as part of a mass vaccination programme.
- The UK RECOVERY trial was the first in the world to discover dexamethasone reduces the risk of mortality by 20% for those on oxygen and 35% for ventilated patients. We ensured patients benefitted immediately from this by having previously acted to secure necessary stock.

Non-pharmaceutical interventions

- Breaking chains of transmission and disrupting the spread of the virus have been key to the UK COVID-19 response.

Non-pharmaceutical interventions that have been implemented include social distancing policies; encouraging working from home and avoidance of public transport where possible; requiring businesses to be COVID-secure; and introducing the wearing of face coverings in shops and enclosed public spaces.

Protecting the most vulnerable

- Identification of over 2 million people at greatest clinical risk and providing specific advice and support. This included the supply of over 4 million food boxes and 2.5 million medicines, supported by the NHS Medicine Delivery Service from community pharmacies and dispensing doctors, the NHS Volunteer Responder Scheme, and local resilience forums; and funding care and support from local authorities.
- The government constantly monitors the latest evidence and the evolving situation in local areas to keep the advice for clinically extremely vulnerable people up to date.

Providing timely data

- The current pandemic has highlighted the importance of Government providing comprehensive, timely and accurate data. It is vital that both operational and policy level decision making is informed by reliable data to help us make the right decisions, and to mitigate emergent challenges or risks. The coronavirus epidemic has highlighted the importance of taking the public with us; putting data into the public domain and presenting statistics in a balanced and fair way to inform public debate and, where necessary, public action.
- We have done that with an unprecedented degree of transparency, both through televised press conferences and online data publication. Our response to the coronavirus pandemic has been stronger and more effective because of data on tests, cases, hospital admissions and deaths, created at rapid pace at the start of the pandemic and shared openly on our coronavirus dashboard and published as Official Statistics.
- We have also been informed by a rapidly emergent flow of data from

other providers – ONS detailed data on deaths and prevalence, NHS England data on pressures on hospitals and JBC analysis of the flow and progression of the disease. These data have also been used to respond to the strongly expressed need from the public for timely updates at national and local level through the creation of the **COVID-19 Dashboard** and other publications.

Economic support

Throughout this crisis, the Government's priority has been to protect people's jobs and livelihoods. In the 2020 Spending Review, it was confirmed that over £280 billion had been spent in response to COVID-19 - including a wide range of loan schemes, business grants, business rates relief, tax cuts, mortgage holidays, increased welfare support, Eat Out to Help Out, tax deferrals, employment support, the Kickstart and Restart schemes, and funding for charities and arts institutions.

More specifically, the furlough scheme, first introduced in March 2020, will be in operation until 31 March 2021, with employees receiving

80% of their current salary for hours not worked, up to a maximum of £2,500 per month. This is available across all parts of the UK, with flexibility embedded so it can be used to cover reduced hours.

In addition to this, the Government has made a range of other support packages available to those on low incomes who have to self-isolate. This includes:

- changing the rules to allow eligible individuals to claim for Statutory Sick Pay earlier;
- increasing the standard allowance in Universal Credit by £20 a week for one year, which means claimants will be up to £1040 a year better off; and
- introducing the Self-Employment Income Support Scheme (SEISS), with the third tranche of SEISS covering trading profits between November 2020 to January 2021 (a taxable grant calculated at 80% of three months' average monthly trading profits and capped at £7,500).

How are we now better prepared for future pandemics?

While each disease is different, requiring a tailored response, the work to strengthen public health systems and other capabilities developed for COVID-19 will form a key part of the response to future outbreaks. These include:

- The new National Institute of Health Protection (NIHP) will bring together existing health protection systems and new capabilities to create a single, scientifically led, agency to focus on the challenges posed by wider domestic and global threats to health. The NIHP will build on the 'local first' approach and experience of the existing system, working closely with councils and local Directors of Public Health to ensure the public gets the best possible service, responsive to the health needs of local communities. Its combination of world leading science with new capability at scale means that all our public health protection science, intelligence, testing and delivery expertise will be working together. It will make us able to respond

more quickly and at a scale needed to deal with a global pandemic, supporting the current COVID-19 response and our planning and response capacity for future pandemics and global health challenges.

- Increasing domestic production of PPE. Before the pandemic, just 1 per cent of PPE was produced in the UK. Thanks to efforts during the pandemic, UK-based supply is anticipated to meet 70% of forecasted demand in England in December for all categories of PPE excluding gloves. This strong domestic supply base transforms our ability to respond to a future crisis. It also has wider benefits including the potential to create jobs and for the UK to become a centre for innovative products that meet user needs.
- Government is working to establish a long-term vaccine legacy strategy to make the UK better prepared for future pandemics. This includes building the capability to manufacture mRNA vaccines and exploring opportunities to collaborate with several UK companies with state-of-the-art DNA production. Market engagement with the private sector is underway to explore collaborative options

for building a bulk antibody manufacturing capability in the UK and funding for skills training has been provided to ensure we have the specialist workforce necessary for advanced medical manufacturing.

- Britain's innovative diagnostics industry has grown to roll out mass testing at scale and develop resilient diagnostic capability capable of meeting demand over the coming months and years. Government has more than doubled the capacity of the NHS and PHE laboratories and set up an entirely new nationwide network of testing sites and new Lighthouse Laboratories and partner laboratories to process COVID-19 swab samples. Two new very high throughput laboratories – 'megalabs' – will open in early 2021. These new labs will form a key part of the UK's national infrastructure to respond to future epidemics as well as adding diagnostic capacity for other critical illnesses, including cancer, cardiovascular and metabolic diseases.



Government interventions to stop the spread of the virus have included non-pharmaceutical interventions such as social distancing policies.



Useful information and advice

Emerging infectious diseases are closely monitored by public health agencies and international partners such as the World Health Organization. Information on specific diseases will be provided as and when they emerge. Individuals travelling abroad should read the travel health guidance below and ensure any recommended immunisations are up to date.

There's up-to-date information and guidance online about:

- what the public and specific services and industries should do while COVID-19 continues to circulate
- the planned public health response to a flu pandemic, including guidance aimed at specific services and industries

The public health advice for COVID-19 and other disease outbreaks is continually reviewed by experts. By following the advice of the public health authorities in the different nations of the UK, we can both help protect individuals and reduce the impact of disease outbreaks on society.

For most, if not all, respiratory virus pandemics (including flu and COVID-19), good hygiene and social distancing will be the most effective defences until a vaccine is developed. Germs can live on some surfaces for hours. Simple measures such as using tissues to catch coughs and sneezes, binning the tissue, then washing hands with soap and water (or using a sanitiser gel) will remove germs and protect others by slowing the spread of the virus.

Antibiotics are unlikely to have any direct effect on the flu or any other virus. Because antibiotics only kill bacteria, they are only of use for people who develop complications from a virus, for example pneumonia.

The 24/7 NHS non-emergency numbers can help with concerns about symptoms.

Dial 111 for:

- NHS 111
- NHS 111 Wales or GIG 111 Cymru
- NHS 24 Scotland
- NHS 111 Northern Ireland

Individuals with hearing loss can use the NHS 111 British Sign Language service:

- **England NHS 111 BSL interpreter service**
- **Scotland NHS 24 111 BSL interpreter service**
- **Wales NHS 111 BSL interpreter service**
- **Northern Ireland NHS 111 BSL interpreter service**

Individuals with hearing loss can also call 18001 111 on a textphone.

Everyone should dial 999 in emergencies.



Additional online resources

- [NHS coronavirus advice](#)
- [GOV.UK coronavirus updates](#)
- [Coronavirus advice for Scotland](#)
- [Coronavirus advice for Wales](#)
- [Coronavirus advice for Northern Ireland](#)
- [NHS flu advice](#)
- [Flu advice for Wales](#)
- [NHS pandemic flu advice](#)
- [GOV.UK infectious diseases information](#)
- [GOV.UK HCID information](#)
- [Information about travel vaccinations](#)
- [Travel Health Pro](#)
- [NHS Inform](#)

Public health organisations by nation:

- [Public Health England](#)
- [Public Health Scotland](#)
- [Public Health Wales](#)
- [Public Health Northern Ireland](#)



The risk of avian influenza increases during autumn and winter as migratory wild birds arrive in the UK.

Animal diseases

What's the risk?

Animal diseases, particularly exotic diseases that are not normally present in UK animals, threaten the UK in a number of ways.

Some animal diseases can spread from animals to humans and cause illness or fatalities. These are called 'zoonotic diseases', and several of these are known to affect animals and humans to the extent that government intervention is required.

The effective prevention, detection and control of diseases in animal populations can help prevent human infections. The 'human disease' section (page 46) has more information on how zoonotic diseases are controlled in the human population.

Examples of zoonotic diseases include:

- **Avian influenza** – this group of flu viruses can be spread by wild birds, movement of infected live poultry, poultry meat, eggs, and contaminated vehicles and materials.
- **Brucellosis** – brucellosis causes abortions in animals and is spread if animals have contact with, or eat, infected substances, such as contaminated feed or water, or drinking the milk of an infected animal. In humans, it causes long-lasting flu-like symptoms and can be contracted by drinking unpasteurised milk from infected animals or contact with abortion material.
- **Rabies** – rabies is spread by bites and scratches from infected animals. It infects the nervous system and is almost always fatal once clinical signs appear. The UK is free from classical terrestrial rabies, however, Lyssavirus (which causes a form of rabies) is present in very low levels in some UK bat populations.

There are a large number of 'non-zoonotic' diseases, which do not spread from animals to humans. These diseases harm the UK by affecting the health and welfare of the animals we rely on for food, trade or to maintain our ecosystem. Examples include:

- **Foot and mouth disease** – this extremely infectious disease can spread through both direct and indirect contact, and can be wind-borne.
- **Swine fever** – both African and classical swine fever spreads via movement of infected pigs or contaminated food and meat products (classical swine fever has been recorded in the UK but African swine fever has not).
- **Bluetongue** – spread between animals by infected midges during the warmer summer months, bluetongue has multiple strains which range in severity, many of which are circulating throughout Europe.

Consequences of animal disease outbreaks may include:

- human fatalities and physical or psychological casualties
- economic damage, particularly to the livestock industry and via lost trade
- animal welfare impacts that may result in the animal having to be euthanased
- impacts on wildlife, biodiversity and the environment
- disruption to tourism and rural communities

Have such events happened before?

Both low and highly pathogenic avian influenza has been recorded in poultry in the UK several times in the last 10 years, although with no human cases reported. The most recent outbreaks of avian influenza occurred in November 2020. Two separate outbreaks were confirmed, one a low pathogenic H5N2 strain and the other a highly pathogenic H5N8 strain.

Bats infected with Lyssavirus have been found every year for the last seven years and there have been a number of cases of equine notifiable disease in the UK in 2019 and 2020.

Bluetongue was first recorded in the UK in 2007. It was eradicated in 2008 through vaccination but UK animals are vulnerable to new incursions.

There was a devastating foot and mouth disease outbreak in 2001 which cost the UK around £8 billion, however, greatly improved response arrangements ensured that an outbreak in 2007 caused much less damage (£150 million).

African swine fever is a global threat and is present in wild boar and domestic pigs in some European countries. It has spread throughout China and Asia, and over six million pigs have been killed and global pork prices have been disrupted.

What's being done about the risk?

Government takes the threat to the UK posed by animal diseases very seriously and regularly exercises its contingency plans to ensure they are fit for purpose. There are laws and procedures in place to reduce the risk of these diseases reaching animals in the UK, and to prevent undetected diseases from spreading if they do. These include:

- **monitoring of disease outbreaks** around the world, with disease surveillance for new and emerging threats and reporting on latest trends
- **import controls** on livestock, pets and zoo animals; products of animal origin and animal by-products from high-risk areas
- **raising awareness** and educating the public and industry of the disease risk and how they can reduce the risk of disease outbreaks occurring
- **bans on feeding animals swill and catering waste (including kitchen waste)** which reduces the risk of live animals coming into contact with infected materials

- **surveillance and alerts** in consultation with veterinary surgeons, industry, animal keepers and operational partners
- **regulations on the movement of livestock** – movement needs to be recorded and for many species there is a standstill period of between 6 and 21 days to minimise the spread of undetected disease

When an outbreak of an exotic notifiable disease is detected in the UK, the government responds quickly, taking measures to control and eradicate the disease. These measures include:

Reducing the risk to public and animal health

Strict biosecurity protocols are put in place at the infected premises to prevent spread to humans, other animals and wildlife. These include the use of appropriate personal and respiratory protective equipment, preventative treatment of exposed people with medications such as antivirals or rabies vaccination, and preventing potentially infected meat, eggs or milk from entering the food chain.

Containment

Movement controls are applied to susceptible animals and animal by-products. Gatherings are banned and, for high-impact diseases, disease control zones are declared around each infected premises. Surveillance is used in these zones to reduce the spread of the disease. Appropriate tracing of animals, people and vehicles is also used to identify the source and prevent the spread of the disease.

Eradication

Susceptible animals on infected premises – and in other places where they are at very high risk of being exposed to the disease – may be humanely culled to reduce the spread of disease.

Vaccination

Vaccines are available for some strains of disease and may be used to supplement or occasionally to replace a culling policy.

Cleansing and disinfection

Infected premises are cleaned, disinfected and re-stocked under supervision. It will likely take several months or years for the UK to be able to declare freedom from the disease for trade purposes.



Useful information and advice

It is a legal requirement that any suspicion of notifiable animal disease is reported early.

Concerns about the health of animals should be discussed with a private vet. If they or the animal owner suspects a notifiable disease, it should be reported using the details below:

- in England, call the Department for Environment, Food and Rural Affairs rural service helpline on 03000 200 301
- in Scotland, contact the local APHA field services office
- in Wales, call the APHA field services Wales helpline on 0300 303 8268
- in Northern Ireland, call the DAERA Helpline on 0300 200 7840 or local **DAERA direct regional office**

Anyone keeping livestock or poultry (even as pets) should follow the **strict biosecurity practices, rules on imports and exports** and **rules on feeding to farmed livestock** to prevent animals from being infected with an exotic disease.

The **Alerts Service** can keep animal owners up to date with the latest news and animal disease alerts. The Health and Safety Executive have published **guidance on work-related zoonotic diseases**.

Anyone who:

- has been bitten or scratched by a bat or imported pet
- is concerned about rabies
- is concerned about having contracted a zoonotic disease from animals should contact their GP or call the 24/7 NHS non-emergency numbers below.

The 24/7 NHS non-emergency numbers can help with concerns about symptoms.

Dial 111 for:

- NHS 111
- NHS 111 Wales or GIG 111 Cymru
- NHS 24 Scotland
- NHS 111 Northern Ireland

Individuals with hearing loss can use the NHS 111 British Sign Language service:

- **England NHS 111 BSL interpreter service**
- **Scotland NHS 24 111 BSL interpreter service**
- **Wales NHS 111 BSL interpreter service**
- **Northern Ireland NHS 111 BSL interpreter service**

Individuals with hearing loss can also call 18001 111 on a textphone.

Everyone should dial 999 in emergencies.

Antimicrobial resistance

What's the risk?

Antimicrobial resistance (AMR) arises when the pathogens (germs) that cause infection – including bacteria, viruses, parasites and fungi – become resistant to the drugs designed to kill them and can no longer be treated.

The most well-known type of antimicrobial are antibiotics, which treat bacterial infections. Other examples of antimicrobial drugs include anti-virals (e.g. HIV treatments), anti-parasitics (e.g. malaria treatments) and antifungals (e.g. Candida treatments).

When antimicrobials become less effective, it is easier for infections to persist and spread. Although resistance does occur naturally, the misuse and overuse of antimicrobials in human and animal medicine, plants and crops is rapidly accelerating this process.

Resistant germs can be found in people, animals, food, and our wider environment (such as in water, soil and air). They can spread between people and animals, through our food, and from person to person. Poor infection control, poor sanitary conditions and improper food handling all encourage the growth and spread of AMR.

There are two main parts to the problem: pathogens are becoming increasingly resistant to our existing antimicrobials, and there are not enough new antimicrobials being developed to replace them. If this pattern continues, we will eventually run out of effective antibiotics. This means we are heading rapidly towards a world in which existing antimicrobial treatments no longer work.



AMR arises when the germs that cause infection become resistant to the drugs designed to kill them and can no longer be treated.

Potential consequences

- The rise and spread of AMR poses a significant threat to society, endangering lives and disrupting health systems, food systems and the economy.
- Unless appropriate action is taken, drug-resistant infections are predicted to lead to 10 million deaths worldwide every year by 2050. This would make AMR a bigger killer globally than cancer is now.
- Antibiotics have been a lifeline during the COVID-19 pandemic. While COVID-19 is a virus (and therefore not treatable by antibiotics), patients on ventilators have been reliant on antibiotics to protect them against developing secondary bacterial infections such as pneumonia. Patients recovering from COVID-19 also have weakened immune systems, and so are less able to fight off bacterial infections without antibiotics.
- As resistance continues to increase, more people will suffer for longer as infections become more difficult to treat. Without working antibiotics, routine surgery like caesarean sections or hip replacements will eventually become too dangerous

to perform, and treatments like cancer chemotherapy will become too risky.

- AMR is not only a health issue. It has a significant socio-economic impact, threatening productivity, food security and trade. The combined impacts of AMR are predicted to push millions more people into poverty worldwide and lead to a cumulative \$100 trillion of lost global economic output by 2050.

Have such events happened before?

AMR is currently estimated to cause approximately 2,000 UK deaths a year and more than 700,000 deaths globally. The current costs to the NHS are around £95 million per year.

Resistant infections continue to increase. In 2018, there were over 60,000 severe antibiotic-resistant infections in England. This is equivalent to 165 new antibiotic-resistant infections per day and represents an increase of 9% on the previous year.

AMR is not a future threat: it is already affecting our ability to treat illnesses.

The pathogens that cause many common diseases such as tuberculosis, HIV/AIDS, malaria, sexually transmitted infections, urinary tract infections, chest infections, bloodstream infections and food poisoning can already resist a wide range of antimicrobial medicines. For example, some strains of tuberculosis are now resistant to 'last resort' antibiotics that are usually reserved for the most severe infections when other treatments have failed.

In 2018, a patient in the UK contracted the first ever global case of multi-drug resistant gonorrhoea (sometimes referred to as 'super gonorrhoea') which could not be treated by any of the recommended treatments for the disease.

What's being done about the risk?

National Action Plan

The UK government set out its longer-term **vision for AMR** to be 'contained and controlled' by 2040, accompanied by a five-year **AMR national action plan**. The plan covers action across human and veterinary medicine, food production, agriculture and research.

Controlling antimicrobial use

Government is overseeing the implementation of commitments which make better use of antimicrobials in human and animal medicines. This includes working with clinicians and the livestock sector to reduce inappropriate use of microbials, and raising public awareness of the problem.

Fast response

Laboratory capacity and surveillance systems are being strengthened so public health teams can identify and track emerging AMR threats and take appropriate and timely action to control outbreaks.

Research

The UK is supporting research to understand how AMR spreads and to identify the most effective interventions and strategies that will benefit frontline teams. Public money is also used to support research into developing new and alternative treatments, vaccines and diagnostics. The UK is also testing a new way of paying for antimicrobials, to give pharmaceutical companies an incentive to invest in these vital medicines.

International collaboration

AMR is a global issue which cannot be tackled by one country alone. Trade and travel have made it easier for pathogens, including those that are antimicrobial-resistant, to move around the world. In 2020, the World Health Organization highlighted tackling AMR to 'protect the medicines that protect us' as one of the 13 **urgent health challenges for the next decade**. The UK government works closely with other countries, international organisations, industry and other groups to strengthen international co-operation and advocate for global action to tackle AMR. UK aid supports low- and middle-income countries to strengthen health systems, such as by improving the quality of care, water and sanitation.



Useful information and advice

The AMR crisis is solvable if action is taken now. The public has an important part to play. By following the below steps, everyone can help make sure our antimicrobial medicines stay effective.

Always follow the advice of a medical professional on whether antimicrobial treatment is needed. Taking antimicrobials, such as antibiotics, when they are not needed increases the risk of pathogens developing resistance. Not all infections need treatment and many mild infections get better on their own. Antibiotics do not work for viral infections such as colds and flu, and most coughs and sore throats.

Where antimicrobials are prescribed, they should be taken exactly as prescribed and never shared with others or kept for later use. Unused medicines should be returned to a pharmacy so they can be safely disposed of and to prevent antimicrobials from getting into the environment.

Good personal and food hygiene is an important way to avoid infections that need antimicrobial treatment. Vaccination is one of the most effective ways of preventing infections, so individuals should stay up to date with vaccines and inoculations.

The overuse of antimicrobials in animals also contributes to the rise and spread of AMR. Pet owners should keep pets healthy, stay up to date with pet vaccinations, and always follow a vet's advice on the use of antibiotics.

Individuals can consider **becoming an antibiotic guardian**. This involves making a simple pledge to help keep antibiotics working for everyone, now and in the future.



Additional online resources

- [UK vision for antimicrobial resistance in 2040](#)
- [UK 5-year action plan for antimicrobial resistance, 2019 to 2024](#)
- [Educational resources on the Antibiotic Guardian website](#)
- [NHS hand washing guidance](#)
- [Food Standards Agency advice on food safety and hygiene](#)
- [British Society for Antimicrobial Chemotherapy educational resources](#)
- [British Veterinary Association policy on the responsible use of antimicrobials](#)

Major accidents



Widespread electricity failure

What's the risk?

Instances of electricity failure (also referred to as power loss or blackout) can have a number of causes including:

- severe weather – high winds, heavy snow, rain, and lightning strikes can damage network infrastructure such as power lines or substations
- infrastructure failure – faults at power stations, damage to electricity lines or cables can disrupt the transmission of electricity
- imbalance of supply and demand – electricity supply and demand need to be perfectly balanced to keep the system operating, so if there is a shortfall of electricity being generated, electricity companies may disconnect some customers to keep the system balanced as a last resort

Electricity failure can occur at a local level, across an entire region, or at a national level. The impacts of electricity failure events will vary with scale.

Consequences of a national loss of power may include:

- disruption to essential services such as transport, telecommunications, water, food, fuel or finance
 - the severity of the disruption would depend on individual service providers' back-up power arrangements
 - these disruptions could lead to physical and psychological casualties or fatalities due to the loss of the services we rely on, such as heating our homes during colder weather
- disruption to health care and the emergency services, if the loss of power lasts a long time
- loss of lighting, heating, air conditioning
- disruption to business, for example via lost working hours, and damage to electronic equipment potentially resulting in data loss or corruption

Have such events happened before?

A regional or national blackout has never occurred in the UK. International examples include:

- a nationwide loss of power in Argentina in 2019 which took two days to recover from
- a power outage in South Australia in 2016 which affected around 2 million people, with power also being restored within two days

Less severe incidents from the UK include a significant outage between 22 and 28 December 2013. As a result of two severe winter storms, around 900,000 UK customers suffered a loss of electricity, predominantly in the south of England. While 876,000 customers had power restored within 24 hours, 16,000 experienced disruption for longer than 48 hours.

A power outage caused by severe weather affected 100,000 people in Lancaster for several days in December 2015.

More recently, in August 2019, a power disruption affected more than one million people across the UK. While power was restored within an hour, services such as the rail network suffered longer disruption. This incident was caused by a lightning strike to an overhead transmission line and the loss of a number of generators at approximately the same time. The wider disruptions were caused by automatic safety systems under the control of individual service providers, as they reacted to frequency and voltage fluctuations.

What's being done about the risk?

Pre-event

Co-ordination

In England, Scotland and Wales, the Department for Business, Energy and Industrial Strategy (BEIS) manages the central government response to, and recovery from, electricity disruptions. In Northern Ireland, the Department for the Economy works with Northern Ireland Electricity Networks Ltd to mitigate against and respond to power loss in Northern Ireland.

Government planning

Arrangements between government, industry, the regulator, and other parties are set out in the **National Emergency Plan for Downstream Gas and Electricity**. This plan describes the national arrangements established between BEIS, the downstream gas and electricity industry, Ofgem and other interested parties. The arrangements ensure the safe and effective management of downstream gas and electricity supply emergencies.

Private sector planning

All energy network operators have plans in place to deal with any interruptions to supply. This includes restoring power supplies after a national electricity failure.



Useful information and advice

Anyone experiencing a power cut in England, Scotland and Wales can call the **free 105 power cut number** to report it and get more information.

105 is also a way to contact the relevant distribution network operator, who is responsible for maintaining the power lines that bring electricity to homes and businesses. Distribution network operators remain the same regardless of electricity supplier.

The **105 website** also contains advice on how to prepare for a power cut. The advice includes simple steps such as keeping a torch and spare batteries somewhere easy to find, and switching off certain electrical appliances ready for when the power comes back on.

Widespread electricity failure could also disrupt mobile phone and landline networks, internet access and access to broadcast services. A wind-up radio is a good way to get updates on the event and, if it's safe, to share these updates with vulnerable neighbours.

In any event, the government will be working with National Grid and Distribution Network Operators to restore power as soon as possible.



Additional online resources

- [How to contact the relevant distribution network operator](#)
- [Power outage guidance](#)
- [About power outages](#)

System failures

What's the risk?

System failures is a broad category of risk. It includes:

- utilities failures (including gas, localised electricity failure, fuel, water and sewerage)
- financial failures (such as a loss of banking systems or other technical difficulties)
- telecommunications failures (fixed and mobile telephone services, and broadband)

In many cases, these incidents will only affect a specific place or be limited to customers of specific services or private companies. Many incidents will be dealt with locally, although some could have knock-on effects that cause problems for large numbers of people.

Widespread loss of electricity has the potential to severely disrupt all other critical systems, resulting in greater consequences than typical utilities failures. For this reason, it is listed separately on the matrix on page 9 and as an individual risk on 68.

Consequences of system failures may include:

- disruption to or loss of essential services, particularly transport, food, water, fuel, gas, finance, communications and education
- physical and psychological casualties or fatalities due to the loss of essential services, such as gas for heating
- damage to property and infrastructure
- economic damage (particularly to business)

Have such events happened before?

In April 2007, the failure of a major pumping component at a wastewater treatment plant in Edinburgh left thousands without access to clean water and caused 1,000 litres of partially diluted untreated sewage to be pumped into the Firth of Forth every second.

On 1 December 2019, 8,000 homes in Falkirk, Scotland were left without gas for heating, cooking and hot water due to a system failure. The outage forced the closure of many schools the following day. The majority of properties were reconnected within 48 hours.

The UK has never experienced an electricity failure affecting an entire region or the country as a whole. However, similar events have occurred internationally. In 2019, tens of millions of people in Argentina, Uruguay and Chile were left without power following a failure in the electricity system. In August 2019, the UK experienced a power outage which affected more than one million people. While power was restored within an hour, services such as the rail network suffered longer disruption.

There has also been disruption to financial services. In April 2018, five million TSB customers were migrated onto a new banking platform. Many of TSB's customers experienced significant problems accessing their accounts online or via the mobile app, and had difficulties carrying out other routine banking activities, including in person at bank branches. The problems continued for a number of weeks.



All energy network operators have plans in place to deal with any interruptions to supply.

What's being done about the risk?

Energy

Private sector planning

All energy network operators have plans in place to deal with any interruptions to supply.

Government planning

Arrangements between government, industry, the regulator, and other parties are set out in the **National Emergency Plan for Downstream Gas and Electricity**. This plan describes the national arrangements established between BEIS, the downstream gas and electricity industry, Ofgem and other interested parties. The arrangements ensure the safe and effective management of downstream gas and electricity supply emergencies.

Prioritisation

The National Emergency Plan for Fuel sets out the government's approach to maintaining fuel supplies in an emergency. The plan is for use by government, the downstream oil supply industry and resilience planners for local services. It includes the possibility of prioritising fuel for the emergency services

and rationing fuel to retail customers using legislation under the Energy Act (1976).

Water and sewerage

Legislation

Water companies in Great Britain are required by legislation to manage risks of failure, through the:

- Security and Emergency Measures (Water and Sewerage Undertakers) Direction (1998)
- Security and Emergency Measures (Scottish Water) Direction (2002)

Response measures

All water companies can provide alternative water supplies to consumers, as well as command and control centres for more severe emergencies.

Telecommunications

Infrastructure investment

Investment, particularly by large telecoms providers, improves resilience to a variety of risks and reduces the likelihood of failure.

Co-ordination

The Electronic Communications, Resilience and Response Group (EC-RRG) is an industry-run body that leads on telecommunications resilience and best practice. EC-RRG membership includes the main operators, the regulator Ofcom, devolved administrations and other government departments. It is supported by the Department for Digital, Culture, Media and Sport (DCMS).

Planning

Extensive and well-practised plans are in place for managing emergencies. The National Emergency Plan for Telecoms is owned by EC-RRG.

Response

EC-RRG uses a National Emergency Alert for Telecommunications protocol to allow operators to work together in an emergency. Operators can share information and resources, and report into DCMS as required.

Engagement

Business customers in particular are encouraged to discuss their needs with their provider to ensure they have the right levels of resilience in place.

Finance

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Co-ordination

The UK financial authorities (HM Treasury, Financial Conduct Authority, the Bank of England and the Prudential Regulation Authority) supervise, co-ordinate and drive changes which improve the operational resilience of the finance sector.

Engagement

UK financial authorities test the sector's resilience to IT failures and are working with the sector to review technology resilience arrangements at major retail firms.

Response

UK financial authorities have an Authorities Response Framework to co-ordinate a response to incidents affecting the finance sector.

**Additional online resources**

- [National Grid gas emergencies and safety advice](#)
- [Ofgem map: who operates the gas distribution network?](#)
- [National Emergency Plan for Downstream Gas and Electricity](#)
- [National Emergency Plan for Fuel](#)

Major transport accidents

What's the risk?

Transport accidents occur across the UK on a daily basis. They happen mainly on public roads and involve private vehicles. There are well-practiced plans in place to deal with major transport accidents at a local level, involving emergency services and local authorities. This section focuses on rare but severe accidents that would require some form of national response.

Consequences of a major transport accident may include:

- fatalities and physical and/or psychological casualties
- disruption to essential services, particularly transport
- disruption to business and tourism
- damage to property and infrastructure
- possible environmental contamination (such as with fuels / cargoes)
- possible evacuation and shelter of local residents or employees

Have such events happened before?

Modern safety regimes have made large-scale transport accidents very rare. However, there have been some major incidents in aviation, maritime, rail and road transport.

Aviation

The last major air accident in the UK was the Kegworth accident in 1989, when a Boeing 737 crashed close to the M1 motorway resulting in 47 fatalities. Commercially-operated helicopters have also been involved in accidents, including the 2013 Glasgow accident which resulted in 10 fatalities, the 2017 Snowdonia helicopter crash with five fatalities, and the 2018 King Power Stadium crash, also with five fatalities.

A privately-operated jet crashed during an air display at Shoreham, West Sussex in 2015, resulting in 11 fatalities on the ground. As a result, the Civil Aviation Authority conducted a review of UK civil air display regulation, which led to the 2018 **independent report on UK civil flying display and special event governance**.



Major transport accidents can occur across all transport modes and can have a number of impacts.

Maritime

The last major accident on a UK-flagged ship at sea happened in March 1987, when the Herald of Free Enterprise capsized shortly after leaving Zeebrugge en route to Dover. There were 193 fatalities.

On inland waterways, the collision between the Marchioness and the Bowbelle in August 1989 on the Thames resulted in 51 fatalities.

Marine accidents such as the Hoegh Osaka in January 2015 and the Transocean Winner in August 2016 resulted in large media coverage due to their nature but neither have involved casualties or disrupted shipping to any major extent, although accidents of this nature do have that potential.

Rail

A derailment in Aberdeenshire occurred in August 2020, resulting in three fatalities and six casualties. The Grayrigg derailment in February 2007 resulted in one fatality and 88 injuries.

On 10 April 2016, the cab of passenger train '1K77' was damaged after a collision with a moving tractor at Hockham Road, resulting in six people being injured. Similar collisions have taken place at other level crossings, including a collision involving a delivery van and a passenger train at Frognaal Farm in Teynham, Kent in October 2017.

The first (and only) incident involving fatalities on a modern light railway in the UK occurred in 2016. A tram in Croydon, England, derailed causing seven fatalities and 51 casualties.

Road

Even the largest road incidents would be highly unlikely to warrant a co-ordinated UK government or devolved administration response. Instead, major road accidents would be managed by local authorities and the emergency services.

What's being done about the risk?

Prevention

Infrastructure improvements

There has been a substantial reduction in both the frequency and severity of rail derailments, thanks to: the introduction of automatic braking systems for trains, the roll-out of train protection warning systems, improvements in the management of lineside assets, and improvements to safety management systems. As a result of these improvements, 2018–19 was the twelfth consecutive year without any passenger fatalities. Efforts also continue to ensure UK roads continue to be among the safest in the world. These efforts range from removing roadside hazards to collaborating with police and safety partners to influence driver behaviour.

Safety regimes and regulation

There are different regimes depending on the mode of transport. The UK government works with industry who deliver safety and security measures.

Response

Planning

All transport sector operators are required to have plans that cover a range of possible incidents, including those most likely to create wider impacts. These plans include introducing diversions where possible, based on safety and operational requirements.

Emergency services

The emergency services' response to transport accidents is covered by their existing arrangements for responding to other types of major incidents.



Useful information and advice

Anyone involved in a transport accident should call the relevant emergency services by dialling 999. To help prevent transport accidents, everyone should follow the necessary guidance when using both public transport and private vehicles.

Additional online resources

- [Civil Aviation Authority](#)
- [Rail Accident Investigation Branch](#)
- [Marine Accident Investigation Branch](#)
- [Air Accidents Investigation Branch](#)

Transport organisation by nation:

- [Department for Transport UK](#)
- [Transport Scotland](#)
- [Transport Wales](#)
- [Public Transport Northern Ireland](#)

Industrial accidents

What's the risk?

Industrial accidents can take a wide variety of forms and their impacts vary considerably in both scale and nature. In some cases, these accidents will have very limited impacts beyond the immediate area and can be dealt with locally. Others can have cascading effects that will have a wider impact. This is a broad category of risks which includes:

- fires and explosions (e.g. affecting power plants, refineries or oil rigs) (information on fires in residential buildings can be found in the 'major fires' section on page 83)
- chemical and biological contamination (such as oil spills or food contamination)
- radiological contamination (from nuclear accidents in the UK or abroad)
- dam breach (leading to a sudden emptying of reservoirs and subsequent flooding)

Consequences may include:

- fatalities and physical and/or psychological casualties

- disruption to essential goods and services, particularly energy, transport, food and water
- damage to property and infrastructure
- economic damage
- introduction of exclusion zones
- decontamination of affected persons, property and the environment
- evacuation, shelter and potential relocation of affected individuals

Have such events happened before?

Industrial accidents have happened in the UK and around the world.

Industrial fire

In December 2005, a fire occurred at the Buncefield Oil Storage Terminal, in Hemel Hempstead, England, resulting in a number of injuries. The incident also generated other impacts such as environmental contamination, interruption to aviation fuel supply, damage to surrounding businesses and domestic properties, temporary evacuations and significant economic repercussions.



Buncefield oil storage terminal, Hemel Hempstead, England, 11 December 2005.

Chemical contamination

In 1996, the crude oil tanker *Sea Empress* grounded off south-west Wales, spilling approximately 72,000 tonnes of oil into the sea, damaging local environments and wildlife. In 2005, over 650 products were taken off the shelves in UK supermarkets due to concerns about contamination of food products with Sudan 1, a colouring agent banned in many countries. On 20 April 2010, an accident occurred at the Deepwater Horizon oil rig in the Gulf of Mexico, resulting in 11 immediate fatalities and almost five million barrels of spilt oil.

Radiological contamination

Nuclear sites are designed, built and operated so that the likelihood of releases of radiological material in the UK is extremely low. Historical accidents include Windscale (UK) in 1957, Three Mile Island (US) in 1979, Chernobyl (Ukraine) in 1986 and Fukushima (Japan) in 2011. Of these, Chernobyl and Fukushima were the most severe.

Dam breach and inundation

Dam breaches in the UK are rare. The last major breach was at the Cwm Eigiau dam in 1925, which caused 17 fatalities and widespread flooding. The Malpasset dam in southern France was breached on 2 December 1959, resulting in over 400 fatalities and widespread damage.

Food contamination

In 2011, a shiga-toxin-producing *E. coli* outbreak in Northern Germany caused 53 fatalities and at least 3,950 casualties. Most or all victims were believed to have become infected in Germany or France, however there

were confirmed cases from 14 other countries including the UK. The likely source of the contamination was attributed to organic fenugreek seeds imported from Egypt and used to produce sprouted seeds.

What's being done about the risk?

Industrial sites

Legislation and regulation

There are laws which give major hazard sites the responsibility to prevent and mitigate accidents which involve dangerous substances: Control of Major Accident Hazard Regulations (2015) and Control of Major Accident Hazard Regulations (Northern Ireland) (2015) (COMAH). Regulators who inspect these sites and enforce the law where required include:

- the Health and Safety Executive (HSE)
- Office for Nuclear Regulation
- the relevant Environment Agency in England, Scotland or Wales
- the Health and Safety Executive Northern Ireland (enforcing equivalent COMAH Regulations in Northern Ireland)

Some major hazard industries have other specific safety regulations, for example for pipelines and offshore gas. These are enforced by HSE and include the Offshore Installations (Safety Case) Regulations (2005) (SCR05), and the Offshore Installations (Offshore Safety Directive) (Safety Case etc) Regulations (2015).

Exercising

Emergency responders and infrastructure authorities practice their response plans and capabilities for simulated emergency scenarios. Major hazard site operators have a duty to prevent industrial accidents and to work with others, including local authorities and the emergency services, to develop and test emergency plans for dealing with major incidents. The Maritime and Coastguard Agency has plans that include emergency responders and local authorities, with procedures for handling vessels involved in accidents and blowouts from offshore wells.

Specialist training and equipment

Training and equipment are provided to emergency responders, including those operating in high-risk and contaminated

environments. Equipment requirements are reviewed in light of major incidents and adjusted where necessary.

Decontamination

Emergency responders and some industrial facilities are trained and equipped to decontaminate those affected by incidents. The Department for Environment, Food and Rural Affairs' chemical, biological, radiological and nuclear emergencies team (Defra's CBRN Emergencies team) co-ordinates clean-up operations and elements of environmental recovery.

Nuclear sites

Legislation and regulation

Nuclear sites and the UK civil nuclear sector are heavily regulated by laws and regulations including:

- the Civil Contingencies Act (2004)
- the Nuclear Installations Act (1965)
- nuclear site licensing
- environmental permitting
- the Energy Act (2013)
- security and safety regulations

- the Radiation (Emergency Preparedness and Public Information) Regulations (2019)

The UK approach reflects international best practice and lessons learned from Japan's Fukushima nuclear accident. Transport of nuclear material is regulated by:

- the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (2009)
- the Carriage of Dangerous Goods (Amendment) Regulations (2019)

The industry has its own independent regulator in the Office for Nuclear Regulation. The UK's approach to working with ionising regulation was reviewed by the International Atomic Energy Agency in October 2019, who found UK regulators and facility operators to be safe, secure and well-prepared to prevent and respond to emergencies.

Planning, testing and exercising

The UK government maintains, updates and tests response plans for nuclear accidents, including for nuclear accidents that happen

overseas. Site operators, local authorities and transporters of nuclear material also review and update multi-agency response plans to ensure they remain current and effective. There are defined emergency planning zones around civil nuclear sites.

Monitoring

The UK government regularly monitors radiation levels, including by ground sampling. A national radiation monitoring network and emergency response system analyses background radiation levels 24 hours a day, alerting the government if abnormal levels are detected.

Identifying lessons

Following Japan's Fukushima nuclear incident in 2011, the UK government assessed the upgraded safety and emergency response arrangements for nuclear sites in the UK and confirmed that they were satisfactory. The government regularly reviews lessons learned and is committed to continuous improvement, which includes adopting international standards when they arise from new evidence.

National plan

The UK government has a National Nuclear Emergency Response Framework, which can be used to co-ordinate a number of national capabilities in response to an (extremely unlikely) large-scale radiological incident. Safety and security is the priority, and the approaches set out above together minimise the likelihood and extent of any radiological release.

Dam breaches

Regulation

English and Welsh reservoirs are regulated under the Reservoirs Act (1975). In contrast, reservoirs in Scotland and Northern Ireland are regulated by different legislation. Scottish reservoirs are regulated by the Reservoirs (Scotland) Act (2011). For reservoirs in Northern Ireland it is the Reservoirs Act (Northern Ireland) (2015).

Flood inundation maps

The Environment Agency produces these maps for England. For Wales and Scotland, this is done by Natural Resources Wales and the Scottish Environment Protection Agency. They conduct extensive mapping of risk areas

to support planners, reservoir personnel, and responders in contingency planning and mitigation.

Identifying lessons

In a 2019 incident at Toddbrook reservoir in Derbyshire, towns were put at risk of inundation when concrete slabs were dislodged by large volumes of water. Following the incident, an independent review was published in March 2020, considering the potential causes of damage to the spillway and the wider lessons to be learned. Government is taking forward the recommendations in the report.

Food contamination

Legislation

The Food Standards Agency (FSA) is the central competent authority (CCA) for food and feed in the UK. Since 2011, an enhanced framework for incident handling has been developed and is reviewed every year. A framework and a legal basis have also been developed to cover how the UK liaises with other countries for routine, crisis and emergency situations affecting the food or feed chain. An enhanced framework has also

been developed for how local authorities (the competent authority) and the CCA work together in serious incidents.

Guidance

Operational guidance has been developed with public health agencies in each UK nation. It outlines the framework for management of food-borne illness at different levels, from crisis to national emergencies. It also outlines the functions, roles, responsibilities, procedures, standards and routine engagement with respective agencies that is already in place.



Useful information and advice

Industrial accidents

Individuals should check their local council's website for details of major industrial sites in the local area. It's important to be familiar with any advice the local authority and the industrial site provide. This advice should always be followed in an emergency unless emergency responders give additional instructions. The Health and Safety Executive's '**Control of Major Accident Hazard**' website also has information on nearby major industrial facilities.

If there is an incident at a local major industrial facility (e.g. a nuclear power plant, oil processing depot or chemical plant), individuals should go indoors, stay indoors and tune in to updates. Doors and windows should be closed to protect from potential fumes or contaminants. Individuals may be asked to evacuate by emergency responders if necessary.

If an individual suspects that the building they are in is at immediate risk of fire from

a neighbouring facility, they should always evacuate in the opposite direction of the incident.

It's essential to follow the advice of the emergency services. Responders have emergency plans in place for local areas, and are trained and equipped to deal with industrial accidents.

Dam breaches

Individuals living near dams and reservoirs should be familiar with any emergency advice issued by the facility managers and the local authority.

A UK dam breach is highly unlikely. However, if a breach occurs, the emergency services will issue a warning and may decide that evacuation is necessary. It's essential to follow their instructions.

The Environment Agency provides information on **dam breaches and flood risk**. Users can check whether an address in England is in an indicated flood zone for a reservoir. For other nations in the UK, this information can be found on the websites of,

SEPA and Northern Ireland's Department for Infrastructure.

Food contamination

The FSA publishes advice on **food.gov.uk** for consumers in the 'food safety and hygiene' section. Guidance for food businesses is in the 'safer food, better business' section. Both sections include advice on good hygiene, safe handling and preparation of food.

In a food contamination incident, the FSA would review whether the routine advice is suitable and sufficient to manage and mitigate the risks. If deemed necessary, specific consumer advice would be issued via **food.gov.uk** or via FSA social media accounts. Retailers would also likely publish the information on their websites and social media accounts.

Consumers, businesses and others can sign up in advance to receive alerts they are interested in from the FSA via **food.gov.uk/news-alerts/signin**

Scotland-specific food contamination advice is also available.



Additional online resources

- [Control of Major Accident Hazards \(COMAH\)](#)
- [Control of Major Accident Hazards public information search](#)
- [Control of Major Accident Hazards: Northern Ireland](#)
- [Control of Major Accident Hazards: Northern Ireland public information](#)

Major fires

What's the risk?

Major fires can start for many reasons, including:

- accidents such as electrical faults, or human activity which combines ignition sources and fuel
- malicious activity such as arson
- infrastructure incidents such as sparks from electricity lines or rail transport
- natural phenomena such as lightning

Consequences of major fires may include:

- potential fatalities and physical and / or psychological casualties
- potential evacuation and shelter of affected people
- damage to property and infrastructure
- disruption to essential services (particularly the availability of fire and rescue services)
- economic costs, environmental damage, air pollution and potential water contamination

Climate change is likely to lead to changes in the rainfall patterns that affect the UK. If we experience longer drier summers, this will increase the risk of drought and could lead to more frequent, larger wildfires.

Have such events happened before?

On 14 June 2017, a residential fire in Grenfell Tower, London, spread beyond the originating apartment, resulting in 71 fatalities and at least 109 injuries. One more resident passed away in the months after the fire, which increased the number of fatalities to 72. The Grenfell Tower Public Inquiry published its Phase 1 report in October 2019. The government is fully committed to supporting the work of the inquiry and has committed to implementing in the most proportionate, practical and effective way and, where appropriate, legislating for, the recommendations in the Phase 1 report.

In 2018, fire and rescue services dealt with a number of wildfires across the country. The vast majority of these were considered business as usual, although some larger incidents (including the Saddleworth Moor

and Winter Hill fires) involved mutual aid from other services and the use of specialist capabilities such as high-volume pumps. Scotland also experiences large, rural wildfires, most recently seen in Dumfries and Galloway in 2020.

What's being done about the risk?

Response

Capability

All fire and rescue services have the capability to fight high-rise fires. Each Fire and Rescue Authority is also required to have mutual assistance arrangements in place with their neighbouring areas to provide additional support in the event of a major incident occurring. Specialist training is also given to fire service personnel, particularly if they operate in high-risk environments.

Forecasting

The Met Office provides a Fire Severity Index for England and Wales, with information on the likelihood and potential severity of wildfires.

Legislation

Fire and Rescue Services Act (2004)

The act requires fire and rescue services to have regard to the Fire and Rescue National Framework.

Fire and Rescue National Framework

This framework for England requires fire and rescue services to assess the risk of emergencies occurring, including major fires. This assessment must be used to inform their planning, assess their capability and identify any gaps and allocate resources across prevention, protection and response as part of the integrated risk management planning process.

Regulatory Reform (Fire Safety) Order (2005)

This order applies to all non-domestic premises in England and Wales. It requires those responsible for workplaces and other premises to which the public have access (including common areas of multi-occupied residential buildings) to assess the risk from fire. They must also put in place suitable fire precautions to remove or mitigate risks to life.

More information on the **Fire Safety Order** is available online.

Government action

Wellbeing support

The council has partnered with NHS England and the Central and North West London NHS Foundation Trust to develop the Grenfell Health and Wellbeing Service, delivering mental health support for all those affected by the tragedy. The NHS trust has screened over 10,000 people, with over 2,400 (including over 450 children) completing or currently receiving treatment. An initial total of 138 households, from Grenfell Tower and Grenfell Walk, lost their homes and needed permanent rehousing.

Cladding removal

The government has made £1 billion available to fund the removal of unsafe non-aluminium composite material (ACM) cladding in 2020–21. This is in addition to the £600 million made available already to ensure the remediation of this unsafe cladding.

Inquiry recommendations

The Home Office is working with London Fire Brigade and the National Fire Chiefs Council to ensure pace and commitment to the implementation of recommended operational changes from the Grenfell Tower Inquiry Phase One report, supported by regular and detailed information on progress. The Home Office has also provided additional funding to fire and rescue services to assist in meeting the recommendations.

Fire Safety Bill

The Home Office has introduced a Fire Safety Bill to ensure building owners of multi-occupied, residential buildings fully consider structure, external walls, balconies and flat entrance doors to identify the general fire precautions necessary as part of their fire risk assessment.

Fire safety consultation

The consultation was published on 20 July 2020 and sets out proposals to strengthen fire safety in all regulated buildings in England. This will help ensure that people are safe from fire regardless of where they live, stay or work. This includes setting out how the government

proposes to implement the Grenfell Inquiry Phase 1 report recommendations that call for changes to the law. Along with the Fire Safety Bill, the proposals complement the Building Safety Bill to improve the safety of residents in blocks of flats of all heights.

Fire Protection Board

The Fire Protection Board, chaired by the National Fire Chiefs Council (NFCC), was established in September 2019 to provide a national forum for key fire protection issues to be considered. The board will take forward the government's commitment that all high-rise residential buildings of 18 metres and above are inspected or reviewed by the end of 2021. This has been supported with £6 million of additional funding for fire and rescue authorities to support delivery of the Building Risk Review programme, and £4 million to establish a new NFCC central strategic protection function. A further £10 million has been made available to fire and rescue authorities in England, to support the Protection Uplift programme. The programme aims to improve protection capability and capacity, while ensuring the safety of other high-risk buildings that are not covered by the Building Risk Review.

Independent inspections

An independent inspection regime for fire and rescue services has been set up. Her Majesty's Inspectorate of Constabulary for Fire and Rescue Services completed the first full cycle of inspections for all 45 fire and rescue services and published the independent 'State of Fire' report in January 2020. This provided information on the state of services nationally and a summary of individual inspection reports. In December 2020, the inspectorate will publish inspections detailing how fire and rescue services operated during the COVID-19 pandemic. This will provide information on what worked well and what lessons can be learnt.

Public awareness

As part of the Fire Kills campaign, the Home Office promotes messages around outdoor fire safety in partnership with the NFCC and local fire and rescue authorities. The campaign includes information on preventing accidental fires in the countryside.

Fire and rescue services are required to assess the risk of emergencies occurring, including major fires.





Useful information and advice

All fire and rescue services advise installing smoke alarms and testing them at least monthly. It is particularly important for residents in tower blocks to be vigilant to the risk of fire and to know what to do in the event of a fire in their building.

It's important for individuals to be familiar with the safety codes and emergency escape routes for the buildings in which they live or work. These could include fire escapes, emergency refuge areas or designated evacuation areas. Individuals should always follow instructions from the emergency services.

The fire and rescue services stand ready to protect individuals, families, homes and businesses against a wide range of different fires, while working hard to prevent fires from starting in the first place.

Local services will have helpful advice and guidance on fire safety for businesses and homes. The links below provide the online fire safety guidance available on:

- [fire safety at work](#)
- [fire safety in the home](#)
- [specialised fire safety guidance for shared or rented accommodation](#)
- [fire safety outdoors](#)

To report a fire, always call 999 and ask for the fire services.

Some fires are started maliciously. This is a crime and any related activity should be reported to the police or other appropriate local authority. It's also possible to report fire-starting activities to Crimestoppers. Both services allow anonymity.

Advice in the **fire safety outdoors** guidance applies equally well to wildfires.

Businesses altering their use of premises – for example in response to COVID-19 guidance – should reassess fire safety requirements at the same time.



Additional online resources

- [Fire England](#)
- [Fire Scotland](#)
- [Northern Ireland Fire and Rescue Service](#)
- [Mid and West Wales Fire and Rescue Service](#)
- [South Wales Fire and Rescue Service](#)
- [North Wales Fire and Rescue Service](#)

Societal risks



Industrial action

What's the risk?

Disruption to industry may take place through a variety of means including blockades, action by pressure groups, 'work to rule' arrangements, or official strike action.

A strike is where a group of workers who are part of a union legally vote via a ballot for action, and then subsequently do not attend work. This is done to gain better conditions through negotiations, for example for pay uplifts or improved health and safety conditions.

Unofficial industrial action can be used as a means of protest or as an attempt to prevent others from attending work. There are legal restrictions around how long strikes can last and in certain critical sectors, such as policing and for prison officers, striking is unlawful.

Industrial action can lead to temporary closures, reduced services and disruption to organisations, customers and the general public. Services might continue, but at a reduced capacity during a strike period.

Consequences of industrial action may include:

- disruption to essential services, particularly transport, health and education
- disruption to business (via lost working hours)
- possible public order challenges
- economic damage (particularly for transport sector industrial action)

Have such events happened before?

The UK has experienced industrial action across a variety of sectors. In the 21st century, there have been strikes in both the public and private sectors including fuel tanker drivers, firefighters, teachers, health service staff, London Underground workers, and government employees. Most recent industrial action and associated activity at picket lines has been peaceful.

An example of significant strike disruption is the South Western Railway (SWR) strike in December 2019. SWR faced an unprecedented 27 days of strike action from the trade union RMT, in response to driver-

controlled operations. During this time, SWR were only able to operate 50% of rail services, severely impacting on the ability of passengers to travel. Previous strike action in 2017, involving the train driver's union ASLEF, had seen all services cancelled across the six days of strike action.

International industrial action can also impact the UK, particularly in the transport sector. This could include air traffic controller strikes or nationwide cross-sector strikes, as seen in December 2019 in France. Events such as these can have an impact on cross-border passenger and freight services at ports, as well as on international rail services such as Eurostar and Eurotunnel.

What's being done about the risk?

Prevention

Negotiation

Wherever possible, government encourages negotiation and mediation, such as via the Advisory, Conciliation and Arbitration Service, as a means of resolving industrial action both before and during a strike.

Monitoring

UK government and the devolved administrations work together closely to monitor impending strike action and resolve it where possible.

Legislation

The Trade Union Act (2016) provides additional protections to critical services.

Contingency planning

The Civil Contingencies Act (2004) legally obliges some organisations (such as the emergency services) to plan for how to maintain services in the event of a strike. Other critical sectors such as fuel distribution also have comprehensive plans in place.

Response**Negotiation and mediation**

This continues during the industrial action.

Minimum service levels

In the event of strike action, operators will be required to maintain minimum service levels. For example, for rail, this would mean a minimum number of train services would still be required to operate.

Substitutions

This process involves staff from within or outside an organisation working adjusted rotas to cover for those on strike. Examples include medical consultants standing in for junior doctors, or the armed forces assisting with mitigating fuel supply distribution.

**Additional online resources**

- [Industrial action and the law](#)
- [Taking part in industrial actions and strikes](#)
- [Stopping industrial action: citizen's rights](#)
- [If your business faces industrial action](#)

Widespread public disorder

What's the risk?

Public disorder can take many forms, including rioting, looting, vandalism, violence and arson.

Disorder is unpredictable, but the majority of protests remain peaceful. On rare occasions, such events can escalate towards conflict. Disorder can be influenced by a variety of factors, such as a breakdown in community and police relations or other community tensions.

Public disorder may be caused by a combination of long-standing grievances and a spontaneous response to a single incident. Peaceful protests are not considered a form of public disorder and the right to protest is enshrined in UK law.

Consequences of public disorder may include:

- physical and / or psychological casualties
- disruption to critical services, particularly policing and health
- damage to property and infrastructure
- evacuation or temporary shelter requirements
- economic damage
- ongoing community tension and concern

Have such events happened before?

In recent decades, serious widespread disorder in the UK has been rare. On 6 August 2011, a protest in Tottenham following the shooting of Mark Duggan by the police escalated into widespread public disorder. Over four days, disorder spread first in London and then to Manchester, Salford, the West Midlands and a number of other towns and cities across England. The disorder varied in character from area to area but included violence directed at police officers, damage to property and extensive looting.

The G20 summits in 2009 and 2017 resulted in varying degrees of violent disorder, while the tuition fees protest in 2010 saw incidents of criminal damage and use of improvised missiles against police.

There have been examples of isolated pockets of disorder within other events. In some cases, social media can falsely amplify the extent of these incidents.

What's being done about the risk?

Pre-event

Monitoring

The police have a range of mechanisms in place to identify and assess known and emerging risks that could require a public order policing response. These are based within community and local policing, and reported and monitored at a force, regional and national level.

Understanding precipitating incidents

Significant work has been carried out following the disorder of August 2011 to improve the government's understanding of how public disorder can begin. This allows the police to identify risks, implement measures to reduce escalation and prepare in advance with plans to allocate and mobilise resources.

Response

Capabilities

Since 2011, improvements have been made to the public order capability. Regular and frequent testing and exercising continues around mobilisation, tactics and training for police, to ensure they are able to respond. The College of Policing and National Police Chiefs Council guide these processes to assure they are consistent and of a high standard.

Community engagement

This engagement is now endorsed as a critical factor in defusing tensions. It is a tactical response built into the foundational element of police command, training and response.

Co-ordination

In addition to a regional network of Public Order Police Professionals (which sits under the National Police Chiefs' Council), there are thematic leads supported by the National Police Co-ordination Centre. The centre is responsible for co-ordinating the deployment of police officers and staff from across UK policing to support forces during large scale events, operations and in times of national crisis.

Riot police stand guard during riots in London, England, on the 8th of August 2011.





Useful information and advice

The police are well equipped to deal with large-scale public disorder and regularly test and exercise their ability to do so. Such incidents are fortunately very rare.

If such an incident does occur, individuals should stay indoors until it is safe to go out. Anybody who is outside should avoid hotspots or areas where police action is in progress.

Businesses should activate their relevant emergency plans when it is appropriate to the circumstances.

Individuals or businesses with security systems that record what is happening – or any other evidence of public disorder or criminal offences – should keep these for use by the police at a later date.

It can be useful to keep abreast of current national and local news and radio. Violent or destructive behaviour should be reported to the emergency services. In an emergency, always call 999.



Additional online resources

- **The Rules of Engagement** – a report following the disorder of August 2011
- **Policing Large-Scale Disorder: Lessons from the disturbances of August 2011**
- **The government's response to the 'Policing Large-Scale Disorder' report**

Serious and Organised Crime

Introduction

Serious and organised crime (SOC) consists of crimes that cause the highest harm to the people of the UK, such as drug trafficking, fraud and child sexual abuse. The threat is complex, evolving, and often hidden. It ruins the lives of victims and destroys communities as organised criminal groups exploit the most vulnerable for their own gain – from defrauding people of their savings to trafficking vulnerable people.

Their crimes are often connected. For example, there is a direct link between people buying drugs on UK streets, the violence of gangs competing to sell them and corrupt accountants laundering dirty money. SOC has a daily impact on our public services, institutions, national reputation and infrastructure, and costs the UK at least £37 billion every year.

The government is committed to ensuring that the National Crime Agency and police have the funding and tools they need to bring criminals to justice and to protect victims.

More information on the threat from SOC and on the UK's response can be found on the below websites:

- **GOV.UK: Serious and Organised Crime Strategy**
- **National Strategic Assessment of Serious and Organised Crime 2020**
- **Scotland's Serious Organised Crime Strategy**
- **Department of Justice (Northern Ireland): Organised crime**

Organised immigration crime and modern slavery

What's the risk?

The UK is an attractive destination for migrants and other people escaping conflict and poverty. Organised crime groups exploit migrants for profit by engaging in people smuggling and human trafficking, which can lead to individuals being forced into conditions of modern slavery. These victims are often vulnerable, making it easier for offenders to coerce them into criminality in the UK, where they can be forced to work in county lines drugs supply, in cannabis cultivation or low-level, high-frequency acquisitive crimes, such as shoplifting.

The threat to the UK from organised immigration crime (OIC) is increasing across all threat types, including:

- covert people smuggling
- facilitation by air, production and supply of fraudulent documentation
- abuse of legitimate means to enter or remain in the UK

People smuggling is of particular concern, as the number of detected entry attempts are increasing. Detections at the border control points in France and Belgium have increased by 10% since last year and detections at UK ports have grown by 14% in the same period. The threat from small boats crossing the Channel has grown over 2019 and 2020. Significant increases in this method of entry have been seen during COVID-19 travel restrictions, as other illegal routes became unviable.

The consequences of OIC might include:

- injury or fatality to individuals, including minors, who attempt hazardous crossings to arrive in the UK
- exploitation of individuals, including minors, into conditions of modern slavery

Did you know?

'County lines' is a term used to describe gangs and organised criminal networks who export illegal drugs into one or more areas within the UK, using dedicated mobile phone lines or other forms of 'deal line'. They are likely to exploit children and vulnerable adults to move and store the drugs and money and they will often use coercion, intimidation, violence (including sexual violence) and weapons.



County lines are likely to exploit children and vulnerable adults.

Modern slavery comprises slavery, servitude, forced and compulsory labour, and human trafficking. Individuals may be exploited in a number of ways, including through criminal, labour and sexual exploitation. Victims of modern slavery are often vulnerable in multiple ways, such as through social and economic disadvantage. They may be reluctant to come forward or may not recognise themselves as victims. Some victims may have been trafficked into the UK illegally, although many victims are UK nationals or have been trafficked within the UK.

Modern slavery is a hidden crime which makes it challenging to accurately assess its prevalence. In 2019, 10,627 potential victims were referred into the National Referral Mechanism (NRM), the UK's system for identifying and supporting victims of modern slavery. This was a 52% increase on 2018.

Exploitation in county lines drugs supply remains the most frequently identified form of coerced criminality, and children represent the majority of victims of this type of exploitation. Adult victims may be forced to work in cannabis cultivation, or low-level, high-frequency acquisitive crimes such as shoplifting. Labour exploitation is often reported across various sectors such as construction, agriculture and car wash services. Sexual exploitation accounts for the highest number of female victims identified in the UK.

Have such events happened before?

The impact of OIC was highlighted by the tragic deaths of 39 Vietnamese nationals, including minors, in a refrigerated lorry found in Essex on 23 October 2019.

In addition, Operation Fort was the largest case to be prosecuted under the Modern Slavery Act 2015. It was also one of the largest labour exploitation cases ever to have been prosecuted in Europe. The case involved over 80 victims, with over 400 others identified as potential victims. The victims were all vulnerable Polish nationals who were offered work in the UK, mostly in agriculture or recycling. The victims were housed in poor accommodation, given very little food, mistreated and threatened with violence if they tried to escape.

What's being done about the risk?

Collaboration

Responsibility for tackling OIC, modern slavery and human trafficking is a shared endeavour across law enforcement and government, including the National Crime Agency (NCA), Immigration Enforcement, Border Force and the police.

Stronger measures

The UK government has invested in measures at home and overseas to tackle illegal migration, for example by strengthening ports and border security. The UK also works with other countries (particularly geographically close countries including France, Belgium and the Netherlands) to ensure a joint approach in the fight organised crime groups.

Victim support

Government is committed to ensuring that victims get the support they need to begin rebuilding their lives, and that those responsible are prosecuted. More victims than ever before are being identified in the UK. In 2019, 10,627 potential victims were referred into the NRM, a 52% increase on 2018. A new Single Competent Authority was launched on 29 April 2019 to handle all NRM cases and provide high-quality, timely decisions for victims. The UK government provides specialist support and advocacy services for victims of modern slavery.

Police operation

The number of live police operations to investigate modern slavery has increased since the Modern Slavery Act (2015) became law, from 188 police operations in December 2016 to at least 2,044 in July 2020. In the year to March 2020, police in England and Wales recorded 7,779 modern slavery offences, a 59% increase on the previous year.



Useful information and advice

The public may hold information of value to law enforcement. Significant investigations into OIC offences have benefited from information from members of the public.

A range of signs of OIC may be visible, including:

- activity at isolated coastal locations or at unusual times of day, including attempts to guide vessels offshore to unusual landfall, and crew showing signs of nervousness
- strange patterns of payment being made, such as the receipt of frequent cash payments from multiple sources through bank accounts.

In an emergency, call the police on 999.

OIC can be reported anonymously by:

- visiting www.gov.uk/reportimmigration-crime
- calling the Immigration Enforcement hotline on 0300 123 7000

- contacting Crimestoppers on 0800 555 111 or via www.crimestoppers-uk.org

There can be indicators that someone is a victim of modern slavery. A person may:

- believe that they must work against their will
- be unable to leave their work environment or home environment
- show signs that their movements are being controlled
- feel that they cannot leave
- show fear or anxiety
- be subjected to violence or threats of violence against themselves or against their family members and loved ones
- allow others to speak for them when addressed directly
- not be in possession of their passports or other travel or identity documents, as those documents are being held by someone else

Full details on identifying potential victims of modern slavery and indicators are available in the recently published **Home Office modern slavery statutory guidance**.

Anyone with suspicions around modern slavery can:

- dial 999 if they or someone else is in immediate danger
- call the police on 101 if there is no immediate risk of harm
- call the independent Modern Slavery Helpline for specialist advice on 08000 121 700
- call the Gangmasters and Labour Abuse Authority on 0800 432 0804 if labour exploitation is suspected
- contact Crimestoppers anonymously on 0800 555 111



Additional online resources

- **Coronavirus (COVID-19): support for victims of modern slavery**
- **Report suspicious behaviour at sea**
- **Office of the Independent Anti-Slavery Commissioner**

Firearms

What's the risk?

The number of offences involving firearms in the UK remains among the lowest in the world and offences involving firearms account for less than 1% of all reported crime. However, the high-harm nature of gun crime continues to create a serious risk to public safety and the risk of homicide.

The ONS figures show that 9,787 firearms offences occurred in the year 2018–19. Although firearms offences have followed a general downward trend since 2004, when there were 24,094 offences recorded, the 2018–19 figure represents a 25% increase from the historic low recorded in 2014–15 (7,729 offences). In 2018–19, the National Ballistics Intelligence Service recorded the highest rate of illegal firearms discharges in the 10 years covered by reporting (2009–2019). This represented a roughly 5% increase from the previous year.

There is understood to be a continuous and resilient supply of firearms into the criminal marketplace, as most firearms identified as part of a crime have only been used once and the majority of firearms recovered by police have never been discharged. Illegal firearms are used in violence and as a threat to support criminal activity. While the use of firearms in a UK-based extremist or terrorist attack remains a realistic possibility and the intent to conduct a firearms attack does exist, access to firearms and ammunition remains a major barrier in the UK.

Police regularly recover illegal firearms through operations focused on organised crime, including drugs and firearms trafficking, gang-related activity and other crime such as robbery. Border Force continues to seize firearms, ammunition and component parts, particularly in parcels, post and as freight is moved on and off ships. This indicates that illicit importation remains a key supply route for UK-based criminals.

The vast majority of registered firearms dealers (RFD) are law abiding. However, there are risks from theft of RFD stock as well as criminal complicity or exploitation given RFD's access to, skills and knowledge of firearms and ammunition. In cases involving an RFD, the scale of supply can be significant. There is also a continued risk from the reactivation or conversion of antique and blank firers, which might be more easily accessible to criminals than lethal purpose firearms.

Consequences of the use of illicit firearms may include:

- casualties and fatalities
- damage to property
- disruption to services such as transport
- economic disruption, such as affecting tourism
- potential coercion and intimidation of communities



Police regularly recover illegal firearms through operations focused on organised crime.

Have such events happened before?

In the worst international instances, firearms have been used by terrorists to inflict multiple casualties. There continue to be incidences of attacks around the world by terrorist groups and individual extremists, including those with extreme right-wing views. Examples of recent attacks include:

- Hanau (Germany) in 2020
- Christchurch (New Zealand), Halle (Germany) and Bærum (Norway) in 2019
- Macerata (Italy) in 2018
- Grand Bassam (Ivory Coast) in 2016
- Sousse (Tunisia) and Paris (France) in 2015

This is in addition to incidents of mass shootings in the USA. It is likely that if terrorists in the UK were able to access firearms, some might seek to carry out similar attacks.

In the UK, there is a strong connection between the criminal use of firearms and the illicit supply of drugs by organised crime groups. Victims of gun crime are generally known to the police, emphasising that criminals use firearms in feuds with other criminals for punishment or to protect or

further their criminal enterprises. In a recent major operation to tackle organised crime, police and the NCA recovered 77 firearms, including an AK-47 assault rifle, sub-machine guns, handguns, grenades and over 1,800 rounds of ammunition. Firearms offences also remain concentrated in urban areas, with over half of offences recorded in five Metropolitan Police areas.

Operational activity and law enforcement investigations have uncovered supply routes to the criminal marketplace from both illicit importation and the lawful market. This activity has revealed that illicit firearm supply routes often overlap with drug supply routes from Europe. Trafficked firearms continue to be recovered by Border Force on a regular basis, and there has been an increase in seizures of firearms, firearm component parts and ammunition being smuggled into the UK.

In 2019, 472 lethal firearms were seized at the border. This figure includes the largest ever seizure of firearms at the UK border, hidden in a car. In addition, law enforcement has disrupted a small number of corrupt RFDs over the past five years, each of whom was involved in supplying firearms to the criminal market.

Data on incidents where an illegal gun has been fired indicates that a large proportion of firearm discharges come from converted, modified and reactivated firearms. This means that criminals exploit more easily available original non-lethal purpose or deactivated firearms and seek to convert and reactivate them.

What's being done about the risk?

Disrupting availability

Suppressing the availability of illegal firearms in the UK is a law enforcement priority. It is anticipated that the use of illegal firearms and ammunition in the UK will continue to steadily increase without continued efforts towards disruption. Once firearms or ammunition enter the criminal marketplace, they are accessible to both OCGs and terrorists.

Co-operation

The 2015 terrorist attacks in Paris prompted a programme of work between the Home Office and law enforcement to better understand how criminals were most likely to access firearms and what action should be taken by law enforcement bodies to disrupt illicit supply. This work resulted in a multi-agency

operation against illegal firearms in late 2016, led by the NCA and National Counter Terrorism Policing Headquarters. It also led to the establishment of the National Firearms Threat Centre in 2017, which provides a permanent multi-agency response to the threat from illegal firearms at the local, regional, national and international levels.

Intelligence and detection

The NCA, National Ballistics Intelligence Service and the Home Office continue to work closely with partners internationally and in the UK to disrupt the supply of illegal firearms through intelligence-led operations. Improving detection at the border and rectifying vulnerabilities also remains an ongoing priority.

Managing international risks

Firearms policies and regulations vary both within the UK (such as between Northern Ireland and the rest of the UK) and across Europe. This challenge requires continued engagement between governments and law enforcement agencies. As a result of these differences, some firearms which are illegal in the UK are accessible and being imported from Europe. To weaken European sources of supply, government departments

and law enforcement partners have worked with European partners to standardise and tighten firearms legislation. Departments and partners are also developing source countries' capability and capacity to combat the threat from international firearm trafficking. Since November 2018, over 400 illegal blank-firing firearms have been seized across the UK as part of an NCA-led national operation, targeting UK customers involved in purchasing firearms online from companies based across Europe.

Legislation

The Offensive Weapons Act (2019) banned certain rapid-firing rifles and modification component parts under section 5 of the Firearms Act (1968). They prohibit the manufacture, sale, transfer or acquisition of such weapons and parts for modifications. New regulations have been laid to provide a statutory definition of 'antique firearm' which will address the criminal misuse of antique firearms by providing legal certainty on which firearms can safely be possessed as an antique without the need for a firearm certificate.



Useful information and advice

To stop firearms getting into the wrong hands, UK law enforcement depends on intelligence about firearms access, supply and use. The public may possess valuable information that can help law enforcement.

Anyone who has information about illegally held firearms or ammunition should contact the police. Reports can be made anonymously by calling Crimestoppers on 0800 555 111 or visiting www.crimestoppers-uk.org



Additional online resources

- **National Crime Agency – illegal firearms**
- **National Ballistics Intelligence Service**



Drugs are known to be a driver of serious and organised crime within the UK.

Drugs

What's the risk?

Around three million people took illegal drugs in England and Wales last year, with around 300,000 in England taking the most harmful drugs – opiates and crack cocaine. Drug deaths have reached record levels and drugs markets have become more violent and exploitative, particularly along **county lines**. Dame Carol Black's Review of Drugs, published in February 2020, considered the health harms, costs of crime and wider impacts on society, and estimated the total cost of drugs to society in England as over £19 billion. It is estimated that 86% of these costs are concentrated in the markets for heroin and crack cocaine.

Drugs are known to be a driver of crime and serious violence within the UK. The review found that the potential future saturation of county lines markets worsens the threat of violence, which could impact wider society.

Drug markets are also diversifying, with more synthetic drugs and new psychoactive substances entering the market. In January

2020, the independent Advisory Council on the Misuse of Drugs reported that fentanyl-analogues (synthetic opioids with a potency much stronger than that of morphine) present a significant ongoing risk to UK public health.

Consequences of these events may include:

- violence linked to the drugs trade increases with impact on public safety
- deaths caused by drug use increases
- strain on public resources such as the NHS and police

Have such events happened before?

In the UK, 44% of homicides in 2017–18 were known to be drug-related. In 21% of violent incidents recorded in 2017–18, the offender was under the influence of drugs.

Drug deaths in 2018 were the highest on record, and were at similar levels in 2019. Since 2012, heroin-related deaths have more than doubled, while deaths involving cocaine have increased five-fold.

In the USA, roughly 28,400 people died from overdoses involving synthetic opioids other

than methadone in 2017 – a 47% increase on 2016 figures.

The NCA has been monitoring deaths from fentanyl analogues in the UK since December 2016. As of January 2020, there had been 167 identified deaths in the UK where a fentanyl analogue had been noted in toxicology reports, either as a single substance or part of multi-drug toxicities. Following a spike in 2017, fentanyl-related deaths in the UK appeared to slow in 2018, with 15 recorded. This downward trend continued into 2019.

What's being done about the risk?

Disrupting supply

A total of 9.6 tonnes of cocaine were seized in England and Wales in 2018–19, an increase of 6.31 tonnes. This is the largest quantity of cocaine seized since recording began in 1973. The total quantity of heroin seized in 2018–19 was 0.75 tonnes – a 53% increase on 2017–18, when 0.49 tonnes were seized. UK law enforcement and international partners have had considerable success disrupting supply and seizing drugs before they reach the UK.

Investment

Government is investing £25 million to tackle county lines by improving law enforcement's response. There is also increased investment for specialist support for victims of county lines exploitation.

Enforcement

Law enforcement is taking a smarter approach to restricting drug supply, by adapting to reflect changes in criminal activity, using innovative data and technology, and working with partners to tackle drugs alongside other criminal activity. To enhance this activity, the government is providing funding to support delivery of 'heroin and crack action areas'. These areas are providing the police and local partners with the space to consider their response to a variety of public health issues, particularly around problematic heroin and crack use and the increase in drug-related deaths.

Education

The government takes a balanced approach to tackling drugs and addressing the harms they cause. Work is being undertaken across government on prevention, for example in schools.

Victim support

The government is committed to protecting the most vulnerable and helping those with a drug dependency to recover and turn their lives around. Work is being undertaken to help people with drug dependencies to seek help via the substance misuse treatment system and to be supported to recover.



Useful information and advice

Children and young people involved with gangs and criminal exploitation need help and support. They might be involved in violence, be pressured into doing things like stealing, carrying drugs or weapons, or be abused, exploited and put into dangerous situations.

A young person involved in county lines activity may exhibit some of the following signs:

- persistently going missing from school or home or being found out-of-area
- unexplained acquisition of money, clothes or a mobile phone
- excessive receipt of texts or calls, possibly on multiple devices

Signs of county lines activity may include the home addresses of vulnerable individuals being taken over, or 'cuckooed', by unknown people.

If an individual suspects someone is involved in drug-related crime, they can anonymously contact:

- the police, by calling 101
- Crimestoppers, by calling 0800 555 111 or visiting www.crimestoppers-uk.org

Other sources of advice and help are available.

The NSPCC can offer support. They can be contacted by phoning 0808 800 500 or by emailing help@nspcc.org.uk

The Children's Society provides **resources for parents who are concerned their child may be being criminally exploited** or involved in county lines.

Parent Info provides **information for parents around knife crime and gang involvement.**

If a child is missing from home, or there are concerns about them being involved in gangs, drugs dealing or county lines exploitation, contact the **Missing People SafeCall service**. SafeCall provides confidential and one-to-one support to children, but they also offer advice and guidance to parents and carers who are concerned and need support. Their free, confidential hotline operates 24/7 and can be reached by calling or texting 116 000 or by emailing 116000@missingpeople.org.uk



Additional online resources

- **Independent Review of Drugs by Professor Dame Carol Black**
- **Misuse of fentanyl and fentanyl analogues**
- **Advisory Council on the Misuse of Drugs**
- **Talk to Frank** for facts, support and advice on drugs

Bribery and corruption

What's the risk?

Corruption is a critical enabler of Serious Organised Crime (SOC), threatening our national security and prosperity at home and overseas. In the UK, there is a particular risk to the law enforcement, prison, and border and immigration sectors which can undermine the rule of law. Overseas, bribery and corruption are a cause of conflict and instability which, if not tackled, can increase risks to the UK.

Corruption and illicit finance fuel wider crimes, such as drugs and terrorism, that threaten the safety and security of citizens. Therefore, tackling corruption and ensuring the integrity of the public and private sectors, procurement and institutions is a government priority. This work may include identifying and prosecuting corrupt officials in key sectors (borders, prisons and police), procurement and local government. Promoting integrity in this way will build trust and longer-term prosperity.

Consequences of these events may include:

- the enabling of a wide range of SOC, such as the trafficking of drugs, firearms and people
- UK institutions and individuals being exploited, manipulated and undermined for criminal gain
- criminal investigations and prosecutions being compromised
- distortion of markets and fair competition

Have such events happened before?

In 2019, a multi-agency investigation into a corrupt agency worker at the Port of Tilbury resulted in a sentence of 14 years and five months following a guilty plea for assisting offenders to import or supply cocaine. The investigation found that a number of drug importations went through the port between January and July 2015. The agency worker acted as a go-between to inform a 'collection team' when a container which he knew held consignments of cocaine had arrived at the port. Four consignments were intercepted, leading to the recovery of more than three-quarters of a tonne of cocaine with an estimated street value of £114 million.

In 2017, a multi-agency investigation involving the NCA, the Metropolitan Police and French police arrested a corrupt UK border officer attempting to smuggle drugs and firearms into the UK. Eight pistols, two revolvers, ammunition and quantities of cocaine and heroin worth a combined £3.4 million were seized.

What is being done about the risk?

Prevention

UK government and law enforcement are committed to strengthening safeguards and protecting against corruption to address the threat from both corrupt officials and those using corruption to further their criminal aims or to gain a business advantage.

Strategy

The government's approach to tackling corruption is set out in the **Anti-Corruption Strategy 2017–2022**. The strategy will be guided by four approaches: protect against corruption, prevent people engaging in corruption, pursue those involved in corruption, and reduce the impact of corruption. There are six key priority areas:

- reduce the threat from corrupt insiders in high-risk domestic sectors
- strengthen the integrity of the UK as an international financial centre
- promote integrity across the public and private sectors
- reduce corruption in public procurement and grants
- improve the business environment globally
- work with other countries to combat corruption



Useful information and advice

Businesses and companies which operate in the UK need to consider the risks of bribery and the measures needed to prevent wrongdoing. A good starting point is the **Ministry of Justice Bribery Act Guidance** which sets out six principles for the prevention of bribery: proportionate procedures, top-level commitment, risk assessment, due diligence, communication (including training), and monitoring and review.

Allegations of bribery and corruption involving UK companies, or foreign companies and individuals with a connection to the UK, should be reported to the International Corruption Unit:
ContactICU@nca.x.gsi.gov.uk

Allegations of bribery and corruption should be reported.



Child sexual abuse

What's the risk?

An estimated 7.5% of adults in England and Wales say they experienced sexual abuse as a child, equating to 3.1 million people. Victims most commonly report that the perpetrator was a friend or acquaintance (of themselves or their family) or a family member (including step-parent), at 37% and 35.3% respectively. The independent body **Internet Watch Foundation** reports that 94% of child sexual abuse (CSA) material found online contains images of children aged 13 or under, and 46% contains images of children aged 10 or under.

The impact on victims' lives can be devastating. Being a victim or survivor of CSA is associated with an increased risk of adverse outcomes including physical and emotional health and socio-economic difficulty.

Victims often feel unable to report their experiences and adults are not always able to recognise that abuse is taking place. For this reason, data sources do not represent the full scale of the issue. Children and young people may feel responsible for preventing abuse,

which can lead to guilt, self-blame and blame from others. Estimates indicate that only one in eight children who are sexually abused are identified by professionals. **The Crime Survey for England and Wales** estimates that less than one-quarter of adults (aged between 18 and 74) have reported abuse they suffered as a child to the police.

There is a risk that technological trends, including more widespread use of the internet and advances such as end-to-end encryption, will amplify the scale, level and complexity of harm to children. Given what we do know about underreporting, there is a risk that the scale of unreported abuse is greater than even the official estimates suggest.

Have such events happened before?

Over the last decade, a series of revelations have brought about step changes in public understanding of the scale and nature of child sexual abuse. These include the reporting of:

- the prevalence of offending in institutions
- offending by people in positions of trust
- on-street grooming
- internet grooming

What's being done about the risk?

Investment

The UK government has invested significantly in work to tackle child sexual abuse and the UK is a global leader in this area. The independent Economist Intelligence Unit's **Out of the Shadows** index on child sexual abuse and exploitation, published in May 2019, gave the UK's response to this crime the highest score of all 60 countries assessed.

Strategy and responsiveness

UK government needs to keep up with this fast-evolving threat, and has committed to publishing a national strategy on tackling all forms of child sexual abuse. Government has also set up the Independent Inquiry into Child Sexual Abuse to consider the extent to which institutions have failed to protect children from sexual abuse and exploitation. The government is considering carefully the inquiry's findings and responding to its recommendations as they emerge.



Useful information and advice

Individuals who are worried that a child or young person is at risk of, or is being, abused, should contact the children's social care team at their local council. It isn't necessary to be entirely sure that a child or young person has been abused: it's OK to report a suspicion. This can also be done anonymously.

Signs that someone might be experiencing sexual abuse include:

- avoiding being alone with, or frightened of, people or a person they know
- language or sexual behaviour they might not be expected to know yet
- having nightmares or bed-wetting
- alcohol or drug misuse
- self-harm
- changes in eating habits or developing an eating problem
- changes in their mood, feeling irritable and angry, or anything out of the ordinary
- physical signs: bruises, bleeding or soreness in the genital area, sexually transmitted infections or pregnancy

Signs that someone might be experiencing online sexual abuse include:

- spending a lot more or a lot less time than usual online, texting, gaming or using social media
- seeming distant, upset or angry after using the internet or texting
- being secretive about who they're talking to and what they're doing online or on their mobile phone
- having lots of new phone numbers, texts or email addresses on their device

When it is suspected or identified, child sexual abuse should always be reported to the police. If it's not an emergency, it can be reported online via [CEOP.police.uk](https://www.ceop.police.uk) or by calling 101. Always call 999 a child is at immediate risk.



Additional online resources

- [Internet Watch Foundation](#)
- [NSPCC – Child Sexual Abuse](#)
- [Child Exploitation and Online Protection Safety Centre](#)
- [WePROTECT Global Alliance](#)
- [Interim Report of the Independent Inquiry into Child Sexual Abuse](#)
- [Children's Commissioner – Protecting Children From Harm](#)

Malicious attacks



Introduction

The threat to the UK

The nature of terrorism is changing. It is becoming more diverse, more complex and increasingly dispersed and volatile – both domestically and overseas. The UK is still confronted by enduring threats from Islamist terrorism and Northern Ireland dissidents, as well as emerging right-wing, left-wing, anarchist and single-issue terrorist threats.

These individuals are moving more quickly from planning to conducting an attack. Attackers are increasingly acting alone and using low-sophistication methods such as bladed weapons or vehicles. The threat of experienced fighters and radicalised individuals returning to the UK remains, while online radicalisation of impressionable individuals continues to be a serious problem.

On Tuesday 3 November 2020, the Joint Terrorism Analysis Centre increased the UK national terrorism threat level from 'substantial' to 'severe' (having been 'substantial since November 2019). This means an attack is highly likely. The level of threat to Northern Ireland from Northern Ireland-related terrorism remains 'severe', which means an attack is highly likely. For further information on threat levels, including an explanation of what they mean and to track any further updates, please see the [MI5 website](#).

Malicious threats to the UK do not just stem from terrorism. They also take the form of hostile state activity (HSA). HSA includes overt or covert action by adversaries that seeks to undermine or threaten the UK's national security, the integrity of its democracy, the functioning of the state, public safety, reputation, or economic prosperity, short of armed conflict.

The UK faces a growing and evolving threat from HSA, further enabled by rapid developments in technology that have provided new ways for adversaries to undermine, threaten, or steal information alongside an increased risk appetite from some to target UK interests and that of our allies.

HSA manifests itself in many forms. These can be acute and aggressive, such as assassination attempts and attempted interference in our elections and democratic institutions. These can also take the form of chronic activity, such as espionage and sabotage, that aims to erode our commercial, technological and economic advantage.

The UK government takes these threats very seriously and is working to counter them in all their forms. In doing so it is drawing on a whole-of-government and whole-of-society approach, as well as continued developments in science and technology, including cyber. Counter-HSA legislation has also been updated to ensure that security, intelligence and law enforcement agencies have the powers they need to tackle these issues.

Who are the potential attackers?

Within the remit of this section, the term 'terrorist' refers to any individual or group seeking to use violence as a means of inflicting terror for political reasons. This includes a wide variety of individuals and groups of varying ideologies and backgrounds.

Islamist extremists continue to pose the most significant terrorist threat to the UK and to UK interests and nationals abroad. Numerous Islamist extremist groups want to conduct terrorist attacks against western countries including the UK. Such groups include Daesh (also known as the so-called 'Islamic State', ISIL or ISIS) in Iraq and Syria, al Qa'ida (centered in Afghanistan and Pakistan), Al Shabaab (in Somalia), and Boko Haram (in Nigeria). Al Qa'ida and Daesh-affiliated groups can be found in the Middle East, South Asia, North and West Africa, South-East Asia and East Africa.

While the threat from Islamist terrorism remains the most significant, the threat from right-wing terrorism has evolved in recent years and is growing. Since 2015, three terrorist attacks in the UK were carried out by lone actors motivated to varying degrees by right-wing extremist ideologies, including the murder of Jo Cox MP in June 2016. Devastating attacks by right-wing terrorists around the world, including in New Zealand, Belgium and the USA, have demonstrated that this is a threat not faced by the UK alone.

Northern Ireland-related terrorism is still a notable threat, with violent dissident republican groups intent on perpetrating attacks against the Police Service of Northern Ireland and prison officers. These attacks can see additional tragic collateral repercussions beyond the intended targets, as in the case of the murder of journalist Lyra McKee in Londonderry in 2019.

What's being done about the risk?

Strategy

The UK government's Counter-Terrorism Strategy (**CONTEST**) is widely respected. It aims to reduce the risk to the UK and its citizens and interests overseas from terrorism so that people can go about their lives freely and with confidence. It ensures that we have the best possible response to the current and future threat from terrorism. It is based around four work strands:

- **Prevent:** to stop people becoming terrorists or supporting terrorism in the first place
- **Pursue:** to stop terrorist attacks
- **Protect:** to strengthen our protection against a terrorist attack
- **Prepare:** to mitigate the impact of a terrorist attack when they cannot be stopped

Legislation

The Counter Terrorism and Border Security Act

received Royal Assent in February 2019.

This new legislation will ensure that the police, security services, prosecutors and the judiciary have the powers they need to tackle the evolving threat posed to the UK by terrorism.

Collaboration

Following pilots in London, the West Midlands and the North West, there now exists a

central multi-agency centre to co-ordinate and deliver appropriate and effective risk management plans for cases across the United Kingdom. The government is also

working with the private sector to develop a new information sharing platform. This collaboration between business, industry and the public sector will make the country safer and enable businesses to thrive and stay secure.

Independent reviews

Reviews such as the Operational Improvement Review (conducted by David Anderson in the wake of the 2017 attacks) and the upcoming Prevent review (expected, at the time of writing, to be completed by August 2021), will continue to improve the approach to keeping the public safe.

Attacks on publicly accessible locations

What's the risk?

There has been an increase in the frequency of terrorist attacks in the UK from 2017. Nearly all of these have occurred in publicly accessible locations that people visit, congregate in, or transit through.

Publicly accessible locations include a wide variety of everyday locations such as sports stadiums, festivals, music venues, hotels, pubs, clubs, bars, high streets, retail stores, shopping centres, markets, places of worship, transport hubs, parks and other open spaces. This list is by no means exhaustive, but it does demonstrate the diverse nature of publicly accessible locations.

A defining feature of such attacks is the targeting of people. This may be random or be aimed at specific groups, for example relating to race or religious beliefs.

Impact of an attack on a publicly accessible location may include:

- fatalities and physical and / or psychological casualties
- significant damage to property and infrastructure
- increased demands on emergency services
- disruption to essential services, particularly transport, health and education
- economic damage, particularly via disruption to business and damage to international reputation
- evacuation and shelter of neighbouring residents or employees

Have such events happened before?

Publicly accessible locations have been targeted by terrorists in the UK and across the world for many years.

The list below details examples of attacks in the UK.

- On 22 March 2017, a terrorist used a vehicle and knife to conduct an attack in Westminster, London, killing five.
- On 22 May 2017, a terrorist detonated a suicide explosive device outside a concert venue in Manchester, killing 22.
- On 3 June 2017, three terrorists used a vehicle and knives to kill eight people in a marauding attack in London.
- On 19 June 2017, a terrorist drove a van into pedestrians outside a mosque in London, killing one person.
- On 15 September 2017, a terrorist left an improvised explosive device on a London tube carriage during the morning rush hour with the intent of causing significant harm. This partially exploded while the tube train was at Parsons Green station. There were no fatalities, although a number of passengers were injured.
- On 31 December 2018, a terrorist attempted to murder three people by stabbing in a knife attack at Manchester Victoria Station.
- On 16 March 2019, a terrorist attempted to murder one person by stabbing in a supermarket car park in Stanwell, Surrey.
- On 29 November 2019, a terrorist killed two people by stabbing near London Bridge.
- On 2 February 2020, a terrorist used a knife to conduct an attack in Streatham, London.

It should also be noted that numerous plots, acts of preparation and conspiracies to commit acts of terrorism in publicly accessible locations in the UK have been thwarted. Suspects have been successfully apprehended and convicted. However, the terrorist threat remains complex and diverse, and changes rapidly.

Recent investigations have led, this year, to the conviction of several terrorist suspects who sought to carry out attacks at notable iconic locations and events such as St Paul's Cathedral and the annual London Pride Parade.

What's being done about the risk?

Protective security and preparedness

Protect duty

Government intends to launch a consultation on the introduction of a 'protect duty', which will likely require a range of owners and operators to consider the risk of, and their preparedness for, a terrorist attack and take proportionate and reasonable measures.

Advice and guidance for stakeholders

Counter Terrorism Security Advisers (CTSAs) engage with stakeholders and provide advice to site owners and operators, local authorities and others. Alongside Counter Terrorism Awareness Advisers, they also deliver awareness sessions and training courses to publicly accessible location managers, front of house and other staff. In addition, they engage with representatives of leading publicly accessible location sectors (such as sports grounds, shopping centres, entertainment centres), member associations, and organisations who own or are responsible for publicly accessible locations. Advice is also provided to local authorities, planners, developers and architects by CTSAs, the Centre for the Protection of National Infrastructure, and the Ministry of Housing, Communities and Local Government. This is delivered through the National Planning Policy Framework and associated guidance, which is designed to ensure that proportionate security measures are considered for appropriate new builds and refurbishments. Online advice and guidance are regularly reviewed and updated. Counter terrorism police also provide targeted communications to stakeholders.

Public awareness and digital tools

Campaigns

Regular public communications campaigns provide advice to the public on the steps they can take to keep themselves safe in the rare event of a firearms or weapons attack, such as the '**Stay Safe**' film.

Online learning and resources

In 2018, the police launched an **Action Counters Terrorism e-learning course**. Overall, half a million participants have signed up. In March 2020, the **Action Counters Terrorism** application was launched. It provides practical advice and guidance on how to protect businesses and how to respond in the event of an attack. As of June 2020, more than 10,000 security specialists and workers in publicly accessible locations have subscribed to the app. The introduction of marauding terrorist attacks **guidance** also advises businesses on how to prepare for a marauding attack and what to do if one should occur.

Reducing terrorists' ability

Explosive material limitations

Government continues to apply measures to make it more difficult for terrorists to source the chemicals and components needed to manufacture homemade explosives and improvised explosive devices.

Transport

The Department for Transport has implemented bespoke security measures across the rail, road, maritime and aviation networks to prevent potential attacks. These have ranged from effective passenger screening within aviation and specialist security programmes across the rail network, to the creation of the Rental Vehicle Security Scheme.

Stringent border security

Driven by strict processes and intelligence, the government and its border control officers seek to make it more difficult to smuggle weapons or dangerous substances into the UK.

Emergency service response to terrorist attacks

Preparedness

The emergency services are trained and equipped to respond to terrorist attacks across the UK in order to save lives, mitigate threats and bring offenders to justice.

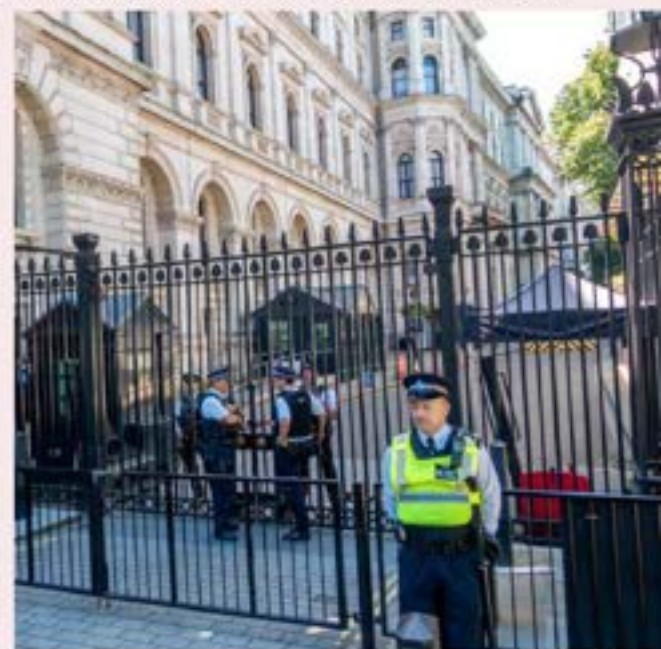
Enhanced capability

There has been significant uplift in the UK's armed policing capability and capacity. This will enable us to respond more quickly and effectively to terrorist attacks, including firearms threats. In addition to armed policing, the UK has specialist fire and ambulance teams trained and equipped to manage casualties in higher-risk environments. This multi-agency capability can be deployed from key locations across the country to attend an incident occurring anywhere in the UK.

Collaborative working

The Joint Emergency Services Interoperability Principles have improved the way the UK's emergency services work together. They are regularly reviewed and are fully applicable to the evolving nature of terrorism.

A significant uplift in the UK's armed policing capability and capacity will enable us to respond more quickly and effectively to terrorist attacks, including firearms threats.





Useful information and advice

The National Counter Terrorism Security Office and partners have published powerful and comprehensive advice for the UK public. Messages have been broadcast across a range of media, providing straightforward guidance to help the public take safe and effective action in response to a marauding terrorist attack or in response to suspicious circumstances.

The UK government's **Stay Safe film** provides more information on how to stay safe in the rare event of a firearms or weapons attack,

Suspicious activity can be reported in confidence **online** or by calling the police on 0800 789 321.

In an emergency always dial 999.



Additional online resources

- **Marauding terrorist attacks guidance**
- **Centre for the Protection of National Infrastructure**
- **Action Counters Terrorism e-learning course**

Attacks on transport systems

What's the risk?

Transport systems include (but are not limited to) railways, buses, passenger vessels, cargo vessels and aircraft. Physical attacks against such systems could take a variety of forms, including explosives, firearms, noxious or corrosive substances, or attackers wielding blades.

In the UK, conventional terrorist attacks on land and air-based transport are more likely than against maritime transport. Risks to maritime transport do still exist, although these risks to British interests and citizens are higher overseas. The likelihood of any of these things happening is still very low.

Consequences of an attack on a transport system may include:

- fatalities and physical and/or psychological casualties
- damage to property and infrastructure
- disruption to essential services, particularly transport

- disruption and negative impact on local, regional and national economy
- disruption to tourism
- disruption or interruption of imports (particularly in the case of maritime incidents)
- possible evacuation and shelter of residents or employees

Have such events happened before?

Land transport

Attacks during peak travel periods can potentially have a devastating impact due to the high volume and concentration of passengers. On 7 July 2005, London's transport system was attacked with four explosions (three on underground trains, one on a bus), resulting in 52 fatalities and over 750 casualties. Subsequent attacks were attempted (unsuccessfully) two weeks later. On 15 September 2017, 30 people were treated for burn injuries following an explosion on a London Underground at Parsons Green station.

Land transport attacks have also occurred overseas. The Mumbai train bombings

of 11 July 2006 saw seven explosions kill 209 people and injure over 300 people. There was a failed gun attack on a high-speed train to Paris in August 2015. On 22 March 2016, three co-ordinated suicide bombings occurred in Belgium: two at Brussels Airport in Zaventem, and one at Maalbeek metro station in central Brussels. This attack resulted in 32 fatalities and over 300 casualties.

Aviation

Aviation continues to be an attractive target for terrorist attacks. There have been several instances on attacks against aircrafts and related infrastructure such as:

- the 1988 bombing of a Pan Am flight over Lockerbie, Scotland, resulting in 270 fatalities
- the crashing of hijacked planes into the World Trade Center, the Pentagon and Pennsylvania, United States, in September 2001, resulting in 2,977 fatalities and over 6,000 casualties
- the destruction of a Metrojet flight from Egypt in 2015, killing all those on board

- an explosion on a Daallo Airlines flight shortly after taking off from Mogadishu in 2016, killing one (the attacker) and injuring two

Unsuccessful attacks include:

- a liquid bomb plot in 2006, where terrorists attempted to circumvent security
- a failed detonation in December 2009 on a flight from Amsterdam to Detroit
- explosives concealed in printer cartridges on cargo planes in October 2010
- the Australian authorities' foiling of an aviation-related plot in 2017

Attacks on airport infrastructure include Brussels Airport in March 2016 and Istanbul Airport in June 2016.

Maritime

In the 1970s and 1980s, the UK suffered attacks and attempted attacks on shipping and ferries from republican groups. Internationally, a number of attacks have taken place overseas, such as:

- a Superferry14 bombing in the Philippines in 2004
- an attack on the oil tanker M. Star in 2010
- recent attacks on shipping near Yemen and in the Bab-el-Mandeb Strait

A similar attack cannot be ruled out in the UK.

In 2019, the Stena Impero, a ship sailing under the UK flag and registered in London, was seized by the Iranian Revolutionary Guard. This demonstrates the potential for maritime incidents, whether they originate from proscribed organisations or are state-sponsored.

What's being done about the risk?

There are several mitigation measures which reduce the vulnerability of potential targets, limit attackers' ability to make explosives or get hold of weaponry and other dangerous substances, and ensure responders are able to operate effectively.

Land transport

Regulation and monitoring

National railways, Channel Tunnel services,

London Underground, Docklands Light Railway and Glasgow Subway are all regulated and monitored by the Department for Transport (DfT). DfT requires these organisations to deliver a range of security measures, and also provides a range of best practice advice to the trams, bus and coach sectors.

Communications

The 'See it. Say it. Sorted.' campaign has been successfully established across the railway and subway sector to raise public awareness of potential terrorist attacks. It provides the public with a simple but effective response to suspicious activity.

Channel Tunnel

Eurostar, tourist shuttles and freight are subject to security screening requirements.

British Transport Police

The British Transport Police work with industry and DfT on security, and provide dedicated, specialised and tailored policing of the railway network.

Aviation

Screening

Passengers, luggage and all staff working in restricted airport areas undergo consistent and regular screening.

Separation

Physical barriers are placed between incoming international passengers and all outbound travellers in airports.

Vetting

Staff working in sensitive roles undergo background checks.

In-flight security and inspections

In-flight security includes hardened and lockable cockpit doors and restrictions on the goods allowed on board or provided by the air crew. The Civil Aviation Authority conducts regular inspections to ensure safety and security measures are being upheld.

Overseas

The government gives security guidance to UK airlines operating abroad and engages proactively with partners such as the International Civil Aviation Organization.

Partners work together to improve and deliver global aviation security.

Cargo

The UK's cargo regime sets out security screening standards for all in-bound and out-bound cargo.

Maritime

Standards

DfT defines and oversees the regulatory regime for the security of UK ports and UK-flagged ships.

Inspections

DfT conducts both announced and unannounced inspections of port security regimes. The Maritime and Coastguard Agency undertakes ships security inspections.

Engagement

Government actively engages with domestic and international partners to strengthen our maritime borders and improve UK maritime security measures.

Passengers, luggage and airport staff undergo consistent and regular screening.





Useful information and advice

The police, British Transport Police and partners in the UK and abroad work hard to keep us safe from threats. Attacks on transport are infrequent, but the simple 'run, hide, tell' guidance is useful and relevant for many transport locations such as ships or airports. **'Run, hide, tell' video guidance** is available online.

To help prevent attacks, the public can also report unusual activity and unattended items to a member of staff or the police.

The police can be contacted on their non-emergency number on 101 across the UK. Always call 999 in an emergency.

Individuals using the railway network, London Underground and certain light rail and tram systems can also contact BTP by texting, 61016 or by visiting their website.

Everyone should remember the simple campaign advice: "If you see something that doesn't look right, speak to a member of staff; we'll sort it. See It. Say It. Sorted."



Additional online resources

- **British Transport Police**
- **Protecting publicly accessible locations from terrorism**
- **Transport security**



Government is working with industry to map UK CNI assets and identify critical vulnerabilities.

Attacks on infrastructure

What's the risk?

Critical National Infrastructure (CNI) are the facilities, systems, sites, information, people, networks and processes that keep the UK running and provide the essential services we all rely on.

These services could include essential human needs, such as electricity or water. They could be critical to the running of the UK, such as telecommunications. Or they could provide a benefit such as healthcare to the general public. A list of the UK's current **national infrastructure sectors** is available online.

Attacks on infrastructure can be carried out through a variety of methods, including explosives, cyber attack, or through 'insider attack'. Specific information on cyber risk can be found on page 127.

CNI sectors represent a core strategic interest for foreign intelligence services who can target sectors for their economic and diplomatic gain, through, for example, espionage activity. The terrorist threat to infrastructure is, for the most part, more limited, though remains aspirational for many international terrorist groups who may deploy improvised explosive devices or chemical, biological, radiological and nuclear weapons to disrupt sectors. In addition, the emergency services and defence sectors in particular do face an increased threat from dissident republican groups in Northern Ireland.

Consequences of an attack on infrastructure may include:

- fatalities and physical and/or psychological casualties
- damage to property and infrastructure
- loss of personal data
- disruption to essential services, such as energy, transport and telecommunications
- economic impacts
- possible evacuation and shelter of local residents or employees

Have such events happened before?

Terrorists in the UK have previously attacked, or planned to attack, national infrastructure. Attempts were made to attack electricity substations in the 1990s. Bishopsgate, in the City of London, was attacked in 1993 and South Quay in London's Docklands in 1996.

Outside the UK, terrorists have carried out attacks against energy infrastructure – recently, militarised drones were used to attack Saudi Aramco's facilities at Abqaiq and Khurais. Attacks have also targeted financial institutions and government buildings. The worst of these was against the World Trade Center, the Pentagon and Pennsylvania, United States, in 2001, resulting in 2,977 fatalities and over 6,000 casualties.

What's being done about the risk?

The mitigation methods elaborated on pages 111 and 112 are relevant to infrastructure attacks as they:

- limit attackers' ability to acquire weaponry or other dangerous materials
- reduce the vulnerability of potential targets
- ensure that responders to an incident can operate effectively

The following activities further reduce the risk to infrastructure.

Reducing vulnerability

Specialist advice

The Centre for the Protection of National Infrastructure is the government authority providing protective security advice to businesses and organisations who own or operate UK CNI. They provide integrated advice on physical and personnel security, which aims to reduce risk and vulnerability to terrorism, espionage and other national

security threats. The National Cyber Security Centre advises government and industry on how to secure cyber infrastructure, and how to respond to cyber security incidents. The Cabinet Office's Government Security Group sets cross-government policies and standards relating to people, physical and cyber security. This ensures that critical systems are as secure and resilient as possible. More broadly, the UK has a comprehensive and well-established programme of work to protect our national infrastructure from terrorism and other security threats.

Common capabilities and responses

Effective planning

The consequences of attacks on infrastructure (and the plans to deal with them) are often the same as for an industrial accident at a critical national infrastructure site (see page 77). Developing plans that can be used in a range of situations is an efficient and effective means of ensuring capabilities are in place to deal with a variety of emergencies.

Physical protective security

Technology and architecture

Barriers such as retractable bollards protect a variety of urban or industrial infrastructure sites from vehicle attacks. Architecture offers 24-hour protection and can be cheaper and more sustainable than more active security measures, such as security personnel. Other measures, such as CCTV, anti-drone technology and fencing are also effective deterrents to potential terrorist activity.

Criticalities work

Identifying vulnerabilities

Government, in conjunction with industry, is mapping UK CNI assets to identify critical vulnerabilities. This mapping will inform our security and resilience practices.



Useful information and advice

Police and partners in the UK and abroad work hard to keep us safe from threats. Attacks on infrastructure are infrequent, but the simple 'run, hide, tell' guidance is useful and relevant for many transport locations such as ships or airports. **'Run, hide, tell' video guidance** is available online.

The British Transport Police's 'See it. Say it. Sorted' guidance on page 120 is also relevant. Alerting security to suspicious activity is as important at utilities buildings or major offices as it is in airports or train stations.

Businesses can follow Metropolitan Police guidance on **'Protecting your business from terrorism'** as a first step in mitigating attacks. They can also seek advice from **Counter Terrorism Security Advisers** via the National Counter Terrorism Security Office.



Additional online resources

- **Centre for the Protection of National Infrastructure**
- **National Cyber Security Centre**
- **National Counter Terrorism Security Office**
- **Guidance on protecting crowded places from a terrorist attack**



CBRN attacks have the potential to kill, injure and cause wide-ranging harm.

Chemical, biological, radiological and nuclear attacks

What's the risk?

Malicious actors including terrorists, hostile states or criminals remain interested in chemical, biological, radiological and nuclear (CBRN) attack methods. In the UK, it is assessed that terrorists are more likely to use knives, vehicles or improvised explosive devices. However, the threat of CBRN attacks cannot be ruled out.

CBRN attacks have the potential to kill, injure and cause wide-ranging harm. Depending on the method used, there is potential for catastrophic blast damage, widespread infection, or contamination of people, animals, the environment, buildings, water supplies and food. The UK government works hard to prevent malicious actors from gaining the knowledge and materials necessary to conduct CBRN attacks.

Attacks could vary from small, targeted incidents, to large catastrophic events at the highest end of the spectrum, such as the

widespread dispersal of a biological agent or the detonation of an improvised nuclear device.

Larger-scale CBRN attacks have never happened in the UK, but would be more challenging to respond to than other malicious attacks, due to the potential health impacts and widespread environmental contamination. CBRN events can also present responders and those affected with significant levels of uncertainty about what has happened, and the scientific evidence may evolve as the incident unfolds. This has the potential to generate a high incidence of psychological impacts including anxiety.

In addition to causing fatalities and casualties (both physical and psychological) and environmental contamination, other potential impacts may include:

- widespread impacts on human welfare, including from the cross-contamination of individuals
- permanent loss or damage to property and infrastructure
- the need to evacuate and shelter of affected individuals

- disruption to critical services, particularly transport but potentially across all sectors
- economic damage, including disruption to business and tourism
- adverse behavioural responses, including outrage and loss of confidence in government and changes in individual behaviour patterns due to fears of further events

Have such events happened before?

Examples of CBRN preparation or attacks outside of active warzones include:

- the use of sarin by the terror group Aum Shinrikyo on the Tokyo underground system in 1995, resulting in 13 fatalities and at least 6,300 casualties
- letters containing anthrax mailed to government buildings in the USA in 2001, resulting in five fatalities and 17 casualties
- Alexander Litvinenko's death on 23 November 2006 in London from poisoning by Polonium-210
- a foiled plot in Cologne in 2018 where a terrorist had bought materials for, and had started to manufacture, ricin, a biologically-derived toxin

- an attack in 2018 on Sergei Skripal, a former Russian military intelligence officer, and his daughter, Yulia Skripal, in Salisbury, and the subsequent death of Dawn Sturgess in Amesbury on 8 July 2018 from exposure to Novichok, a chemical warfare agent

What's being done about the risk?

The government continues to reduce the vulnerability of the UK to CBRN attacks through activity including:

- improving methods to **detect** and **monitor** CBRN materials, including through the UK border
- **limiting access** to hazardous materials and their precursors
- **improving and maintaining capabilities** to enable emergency responders to respond effectively, rapidly and safely to CBRN events
- ensuring **guidance** is available before and during incidents, and increasing public access to **information** on what to do during general and hazardous materials emergencies to minimise the risk to the public

A comprehensive nationwide programme includes the following common capabilities and responses:

Planning

Plans to deal with a CBRN incident are kept up to date and regularly tested in exercises.

Training

All emergency responders are trained in the immediate steps needed to save lives after a CBRN incident. General responders are supported by specialists across the emergency services, who are trained to operate in hazardous environments. Test exercises have assured the quality of this response, which was also successfully deployed in Salisbury and Amesbury in 2018–19.

Disposal

If a device is identified before it functions, the police and armed forces have the capabilities to render CBRN devices inoperable and to safely dispose of the hazardous material.

Medical countermeasures

The government maintains national stocks of medical treatments with arrangements in place for how these would be distributed in an emergency.

Evacuation and shelter

Local authorities can adapt existing plans for other large-scale incidents to support affected individuals.

Decontamination

The emergency services are regularly trained and equipped to decontaminate large numbers of people. The Department for Environment, Food and Rural Affairs has mechanisms in place to enable decontamination of buildings and environments.

Government continuity

Plans are in place to ensure effective civil government can continue throughout and after an incident.

**Useful information and advice**

Individuals who suspect a CBRN incident has taken place should:

- remove themselves from the hazard to avoid further exposure
- remain in the general area if it is safe to do so
- contact the emergency services on 999
- follow their instructions

It is also recommended to remove outer clothing, which is potentially contaminated, as soon as possible. Await the arrival of the emergency services and follow their instructions.

Emergency responders are trained to deal with these kinds of events. They may need to use PPE as seen in the image below.

If emergency responders think a person has been exposed to a potentially harmful substance, the person could be asked to leave the immediate vicinity of the hazard (remaining nearby at a safe location) and, if not already done:

- remove outer clothing
- undergo some form of decontamination (e.g. dry decontamination and / or showering – see the **Joint Emergency Services Interoperability Principles**)

In some situations, people may also be advised to take shelter in the nearest appropriate buildings.

**Additional online resources**

- **CPNI: Recognising terrorist threats guide**
- **Initial operational response to a CBRN Incident**
- **CBRN emergencies**
- **Guide to protecting and defending food and drink from deliberate attack**

Cyber attacks

What's the risk?

The integration of the internet into our daily lives has been a continuous trend in the 21st century. Individuals, businesses, charities and government all rely on digital technology and online capability, including in the delivery of essential and public-facing services.

The COVID-19 pandemic has emphasised our reliance on digital technologies, both through personal communication and through business and government's ability to work remotely in support of the national response.

While there are huge opportunities and benefits for individuals and businesses, our vulnerabilities become greater as we increasingly rely on cyberspace.

The range of malicious actors as well as the range of targets continues to expand. Cyber criminals engage in criminal activity to exploit weaknesses in online systems, usually for financial gain. As well as using technology to commit a crime (such as hacking to steal data), offenders can also increase the scale

and reach of a crime (such as cyber-enabled non-fiscal fraud). States and state-sponsored threats tend to be politically motivated, and may attempt to access and cause disruption to strategic systems across:

- government
- the electoral system
- the wider public sector
- other key sectors

The cyber environment is also a space where terrorist groups, hacktivists and insider threats can carry out activity that causes harm and disruption to the UK and its citizens.

Information available online, such as hacking guides and malware, allows less capable individuals and organisations to conduct malicious activity. As software and hardware develops, there is a race to ensure systems and networks are protected before malicious actors can identify weaknesses and exploit them.

Any sector of our economy and society that uses IT networks and systems is vulnerable to the threat. Cyber attacks can cripple essential

networks, for example, by encrypting or destroying data on which vital services depend. Such attacks can impact critical national services, and could cause a variety of real-world harm if services like the NHS are impacted.

Financial loss is the most common impact, through both direct loss of funds as well as recovery costs and reputational impacts. When attacks occur against individuals, there are emotional as well as financial impacts. Stress, anxiety and depression are commonly cited in victim surveys, with some victims experiencing long-lasting effects.

As a whole, public confidence may be affected if organisations are not able to adequately protect their systems.

Have such events happened before?

The National Cyber Security Centre (NCSC), the UK's national technical authority on cyber security, responded to over 600 cyber incidents in 2019 and over 700 in 2020. Since it began operating, the NCSC has provided support to almost 1,200 victim organisations and handled over 2,500 incidents. This

included the global and high-profile WannaCry incident in 2017 which caused serious disruption to the NHS.

More recently, during the COVID-19 pandemic, a number of state and non-state actors have attempted to take advantage of the situation – either to exploit changes in working patterns, or for intelligence gathering and disruption.

According to the **Cyber Security Breaches Survey**, almost half of businesses (46%) and one-quarter of charities (26%) report having cyber security breaches or attacks in the last 12 months. Like previous years, this is higher among medium businesses (68%), large businesses (75%) and high-income charities (57%). Among the 46% of businesses that identify breaches or attacks, more are experiencing these issues at least once a week in 2020 (32% vs. 22% in 2017).

In the year ending March 2019, it is estimated that there were just under one million (966,000) incidents of computer misuse

experienced by adults aged 16 and over in the UK. This included offences such as the spreading of viruses, hacking or gaining unauthorised access to information, or denial-of-service attacks that disrupt or take down networks and websites. While this is lower than the previous year, the large volume still shows the scale of the threat.

What's being done about the risk?

Strategy

The National Cyber Security Strategy 2016–2021, supported by £1.9 billion in investment, sets out the government response to ensuring that government, CNI, businesses and citizens are as resilient as possible to cyber threats.

Advice and support

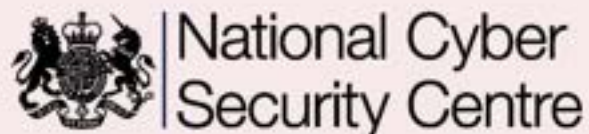
The NCSC, part of GCHQ, was launched in October 2016. It supports the most critical organisations in the UK, the wider public sector, industry, SMEs and the general public. When incidents do occur, the NCSC responds to minimise harm to the UK, help with recovery, and learn lessons for the future.

Active Cyber Defence (ACD)

The NCSC's ACD programme aims to enhance the UK's national resilience. It automatically protects UK internet users from the vast majority of crude, high-volume cyber attacks. It also implements security measures to strengthen the security of networks and systems to make them more robust against attack. Its products include Mail Check, Web Check, Takedown Service and a national Domain Name Service.

Incentives and regulation

Since 2016, government has strengthened its wider regulation with an impact on cyber security, and continues to implement new legislation including the Data Protection Act, General Data Protection Regulation, and the Network and Information Systems Regulations. Existing sectoral regulatory frameworks have also been improved. Government is also responding to industry evidence on the barriers organisations face in managing cyber security risks, and the effectiveness of existing approaches.



The National Cyber Security Centre supports the public sector, industry, SMEs and the general public to maintain cyber security.

Law enforcement response

The NCA's Cyber Crime Unit, Regional Organised Crime Units, and dedicated cyber crime units in every police force in England and Wales provide a local-to-national response in countering cyber threats. They also support individuals and businesses who fall victim to cybercrime.

Secure by design

The government aims to protect citizens and the economy from the harms that can arise from vulnerable internet-connected products. It intends to safeguard consumers by building automated protections into product design. Following public consultation, the government has communicated its plan to legislate to improve security standards of internet-connected household devices, building on a **Code of Practice**.

International collaboration

The UK is committed to promoting international stability based on the application of existing international law, voluntary norms of responsible state behaviour and confidence-building measures endorsed by the United Nations General Assembly.



Useful information and advice

Cyber security is everyone's responsibility. It is vital that all individuals and organisations embrace and embed cyber security in their online practices.

See the **National Cyber Security Centre's website** for information and advice on:

- dealing with common cyber problems
- protecting data and devices

Cyber crimes can be reported to Action Fraud at **www.actionfraud.police.uk** or on 0300 123 2040.

They can also be reported to the police, or Crimestoppers on 0800 555 111 or **www.crimestoppers-uk.org**

The NCSC published guidance on secure home working, online shopping and secure use of video conferencing to help the public stay secure online during the COVID-19 pandemic. NCSC's **Cyber Aware** campaign provides further information on the steps individuals and small businesses can take to protect themselves online.



Additional online resources

- **National Cyber Security Centre**
- **Cyber resilience guidance for Scotland**
- **Northern Ireland Cyber Security Centre**
- **National Cyber Security Centre Annual Review 2020**
- **National Cyber Security Centre - reports and advisories**
- **2016 National Cyber Security Strategy**
- **Cyber security advice for sole traders**
- **Advice for small and medium enterprises**
- **Advice for large organisations**

Disinformation

What's the risk?

Disinformation is the concerted effort to create and deliberately spread false or manipulated information to deceive and mislead for political, personal or financial gain.

It often targets a specific topic or groups of people and can involve the creation and dissemination of false content. It often targets and exploits social media platforms, for example by creating multiple fake accounts and using them to spread false information.

In contrast, misinformation is the unintentional sharing of false information. While it may not be deliberate, it can still have similar harmful effects.

Disinformation can be used by a range of people and groups with malicious intent to promote their own causes, create division among communities and undermine democratic processes such as local or

national elections. This can include foreign states, extremist groups and criminals. The act of spreading disinformation is not illegal, but the content may be, for example if it encourages violence or criminal damage, constitutes a hate crime, or presents a threat to life.

Disinformation has a corrosive effect on the 'information environment' – that is, the places and sources where people get their information and news. Disinformation spreading on social and traditional media makes it harder for people to distinguish between what is true and what is false. They may become more likely to subscribe to false explanations and theories rather than facts.

Continued disinformation campaigns can lead to a greater susceptibility to believe false information and the refusal to accept accurate, fact-based information. People may then take actions or decisions based on incorrect information. These actions or decisions can be directly harmful to the individual concerned or others.

Consequences of successful disinformation campaigns may include:

- reduced trust in institutions, experts, sources of accurate information or democracy itself
- failure to follow advice that keeps the individual and others safe
- actions that are dangerous to individuals and others – such as attacks on minority groups or elected representatives, refusal to follow essential safeguarding instructions, and disorder or violence against people or infrastructure

False or manipulated information is not easy to spot. It may take subtle forms which make it difficult to distinguish from legitimate information or online content. Any delay in discovering and taking action against disinformation allows more individuals to see, and potentially believe and even act on, that false information.

False information can take on a life of its own and have some serious consequences. It can lead to health scares, false accusations and potentially damaging hoax stories.

Have such events happened before?

This risk can take many forms and have different effects. False information about the COVID-19 pandemic has included:

- pages promoting false (and sometimes harmful) COVID-19 cures
- misinformation over public health, including anti-vaccination narratives
- conspiracy theories falsely linking COVID-19 with 5G technology
 - this was linked to real-world harms including 5G masts being burned and abuse of telecoms staff

Another example is a disinformation campaign spread by Russian news sources following the Salisbury and Amesbury Novichok poisonings in 2018. Over 40 different conspiracy theories were sown by the Russian state and through its proxies.

These stories cast doubt on the true version of events and made it harder for the public to understand what had happened.

What's being done about the risk?

Tackling disinformation in all its forms remains a key priority for the UK, and the Department for Digital, Culture, Media and Sport (DCMS) is leading work across government to tackle this.

To reduce the potential impact of disinformation, it is important to take account not only of the actors involved, but also of:

- the environment that enables them to spread and amplify false information
- the audience that they reach

This cannot and should not be done by government alone. It can only be achieved through working with industry, the media and civil society institutions, and international partners.

Existing measures to address disinformation and misinformation include:

Rapid Response Unit

Since 2018, the unit has operated from within the Cabinet Office and Number 10 to tackle a range of harmful narratives online – from purported 'experts' issuing dangerous misinformation to criminal fraudsters running phishing scams.

Cross-Whitehall Counter Disinformation Unit

The unit is 'stood up' during periods of acute disinformation risk to provide a comprehensive picture of the extent, scope and reach of disinformation and misinformation, and to work with partners to take action. The unit has been stepped up during the COVID-19 pandemic and during election periods.

Providing accurate COVID-19 information

Government is committed to ensuring that the information people access about the virus is accurate. The government is working with industry to introduce systems and processes that promote authoritative sources of information, and to help social media platforms identify and remove incorrect claims about the virus, in line with their terms and conditions.

SHARE checklist

The checklist aims to help those who see, inadvertently share, or are affected by false and misleading information. It includes five easy steps to identify false content, encouraging users to stop and think before they share content online.

Digital growth

More generally, government is working to ensure that the UK can be the safest place in the world to be online, and the best place to grow and start a digital business.

Reponse to the Online Harms White Paper

In February 2020, government published the initial response to the **Online Harms White Paper**. The government response shared initial consultation findings and indicated how it will move forward on the key themes which emerged from the consultation responses. Government will publish a full response to the Online Harms White Paper consultation later this year. This will include more detailed proposals on online harms regulation and will be released alongside interim voluntary codes on tackling online terrorist and child sexual exploitation and abuse content and activity. This will be followed with legislation in early 2021. Government will ensure that there are safeguards in the legislation, so companies and the new regulator have a clear responsibility to protect users' rights online, including freedom of expression. While action is being taken to address false narratives online, the government will continue to ensure that freedom of expression in the UK is protected and enhanced online.



Useful information and advice

It is critical that consumers of information follow official government guidance, including the **SHARE checklist**. This includes basic but essential advice such as checking the source of a story and analysing the facts before sharing. If followed correctly, it will help to protect lives and livelihoods.



The Government launched the Share Checklist in 2019 to help people know what information they are consuming.

- **Source:** make sure the story is written by a trusted source with a reputation for accuracy. If it's from an unfamiliar organisation, check the website's 'about' section. Rely on official sources for medical and safety information.
- **Headline:** always read beyond the headline. If it sounds unbelievable, it very well might be. Be wary if something doesn't seem to add up.
- **Analyse:** check the facts. Just because a story is circulating, it doesn't mean it's true. Use fact-checking websites and other reliable sources to double check.
- **Retouched:** check whether images look manipulated. False news stories often contain retouched photos or re-edited clips, or show an unrelated place or event. Sometimes they are authentic, but have been taken out of context.
- **Error:** look out for mistakes. Typos and other errors might mean the information is false. Many false news stories have phony or look-alike URLs. Look out for misspellings, bad grammar or awkward layouts.

Risks occurring overseas



Risks occurring overseas

What's the risk?

Incidents and accidents overseas may put individuals' safety and security at risk while travelling or living abroad. Wherever people are in the world, the host government has responsibility for ensuring the safety of its citizens and overseas visitors or residents, including during a crisis situation.

The level of response and assistance from local authorities may differ across and between countries. The likelihood or severity of risks may be higher in certain countries and regions. When incidents or accidents occur in unfamiliar environments in foreign countries, it can be more difficult to know where to find assistance.

Types of incident and accident which may affect individuals travelling overseas include:

- accidents concerning modes of transport such as road vehicles, aircraft or boats
- being targeted by criminals, such as theft, kidnapping or scams
- falling ill and requiring medical assistance
- travel disruptions due to cancellations or delays
- being caught up in political events, protests or terrorist attacks

Incidents which could require a crisis response from the UK government include:

- civil or political unrest of such severity that the Foreign, Commonwealth and Development Office (FCDO) may advise leaving the country
- events which cause disruption and hardship to large numbers of British people, such as the collapse of travel companies, major airport shutdowns or other large-scale disruption to international transport (such as during the COVID-19 pandemic)
- an incident in which large numbers of British people are or could be killed or injured, such as conflict, terrorism, major transport incidents, major disease outbreaks and natural disasters such as earthquakes, hurricanes and tsunamis

Have such events happened before?

While the majority of visits overseas are trouble-free, incidents do happen. Prior to the COVID-19 pandemic, approximately 350,000 people a year contacted the Foreign and Commonwealth Office (FCO: the predecessor to the FCDO) and its network of posts for consular assistance advice, with 85% of queries being resolved on first contact.



The FCDO's network of embassies and High Commissions can assist British travellers who find themselves in difficulty overseas.

In 2019, the FCO also responded to 15 separate crisis situations where British nationals were affected, including the Ethiopian Airlines crash in March, the terrorist bombings in Sri Lanka in April, the impact of Hurricane Dorian in The Bahamas in September, and the largest-ever peacetime repatriation of over 144,000 people following the collapse of Thomas Cook.

At the start of 2020, the COVID-19 pandemic led to the repatriation of 180 British people from Wuhan, China in January. By the summer the UK government had brought home more than 38,000 British travellers on 186 charter flights using a new and exceptional operating model of working globally with airlines, commercial partners and foreign governments. The UK government also helped some 19,000 passengers to return from international cruise ships. At the same time, the UK government worked with global partners to keep key routes and transit hubs open, which helped an estimated 1.3 million people to return to the UK by commercial routes.

What's being done about the risk?

Safer worldwide environment

The UK government works to create a safer environment worldwide, through:

- working with international partners such as the UN and NATO to increase global security
- helping the development of countries through overseas development aid projects
- engaging with other governments to help prepare for and respond to natural disasters to help reduce their impact

The FCDO has around 17,300 staff in diplomatic and development offices worldwide, including in 280 overseas embassies and High Commissions. Staff build and maintain diplomatic networks and strong relationships with other countries on many issues.

Public information and awareness

When travelling overseas, individuals should take steps to ensure their own personal safety. The UK government is only able to

provide additional support where individuals are not able to help themselves, and where it will not put staff members at risk. The FCDO provides guidance to help people prepare for travel and avoid difficult situations. This includes the government's 'Run, Hide, Tell' advice, running **Travel Aware** campaigns both in the UK and overseas, and providing advice on individual country risks through the GOV.UK travel advice pages.

Overseas staff

Where British people do find themselves in difficulty, the FCDO's network of embassies and High Commissions can assist travellers who aren't able to help themselves. Consular support officers are trained to provide assistance in a wide variety of situations and are available for emergencies 24/7. They work with local authorities, including hospitals and police, to make navigating their services easier for British people. In a crisis scenario, the FCDO has a response structure which includes deploying extra staff overseas to support British nationals and other eligible people as defined in **Support for British nationals abroad: a guide**.



Useful information and advice

People travelling overseas should always read and follow the relevant country advice provided by the UK government, as well as any information provided by that country's government and local authorities.

Travellers should check **travel advice** and sign up for country-specific travel advice updates. FCDO travel advice will help travellers form their own judgements about travelling or living in a particular country, and will provide any new information. Travellers should also seek out news reports of any problems in the area they are visiting.

The FCDO provides updates at **@FCDOtraveladvice on Twitter** and **@FCDOtravel on Facebook**.

Choosing to go to a place against FCDO travel advice may seriously restrict the help that can be provided, and may invalidate health insurance. Travellers should take out **travel insurance** which covers pre-existing medical conditions and any planned activities, including adventurous ones. Without adequate insurance, travellers will have to pay for any emergency costs such as medical bills or additional flights.

At least eight weeks before travel, travellers should check the latest country-specific health advice on the **National Travel Health Network and Centre (NaTHNaC) TravelHealthPro website**. The advice covers travel-related risks and diseases, including vaccine recommendations. Health advisors or pharmacies can then advise on other preventive measures and managing pre-existing medical conditions while abroad.

Guidance is also available from **NHS (Scotland)'s fitfortravel website** and the **NHS website**.

Prescribed medicine (enough to cover the duration of the trip) and a copy of the prescription should be taken abroad. Travellers should check that their medication is legal in the country by contacting the **foreign embassy**.

Passports and any necessary visas must be valid and in good condition. Emergency contact details within the passport should be filled in. It is also useful to take a picture of the personal details page of the passport.

Family and friends should be provided with:

- copies of passports
- copies of travel insurance policies (plus the insurer's 24-hour emergency number)
- ticket details
- trip itinerary
- contact details

Travellers should take copies of these items with them, too.

It's important to take enough money and some backup funds, credit cards, travellers' cheques, or prepaid cash cards. Individuals should know how to replace a credit card if it's lost or stolen, and how to contact their bank. Keep a separate note of their phone numbers.

Guidebooks have plenty of information on local laws and customs, and the standards of behaviour people expected in the country. Travellers should be aware of personal security and take sensible precautions.

If an incident does occur abroad, individuals should follow the advice of local authorities and their travel company. Consular assistance is available for emergency situations 24/7, so it's also worth noting down the local telephone number of the relevant British embassy.



Additional online resources

- [Foreign travel checklist](#)
- [Country-specific travel advice](#)
- [Travel Aware campaign](#)
- [Support for British nationals abroad – FCDO Guide](#)
- [List of British embassies and High Commissions](#)
- [Counter Terrorism Policing – Stay Safe Abroad](#)



HM Government

