SUSTAINABILITY ACTION

CLIMATE CHANGE RISK ASSESSMENT AND ADAPTATION PLANNING

GUIDANCE FOR NHSSCOTLAND HEALTH BOARDS

NOVEMBER 2020
VERSION 1.2

NHS SCOTLAND

DOCUMENT CONTROL

Version Number	Date Issued	Summary of Changes	Approved by
V1.0	April 2018	N/A	Short-life working group
V1.1	September 2019	Updated to incorporate CCRA Tool minor changes to layout	Kathryn Dapre
V1.2	November 2020	Updated to incorporate revisions to CCRA Tool	Kathryn Dapre

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TAKING ACTION ON CLIMATE RISKS NOW WILL ACHIEVE LONG TERM COST EFFICIENCY

The Climate Change Risk Assessment and Adaptation Planning Tool for Healthcare Assets sets out what needs to be done to assess your climate risks and prepare an adaptation plan – this guidance outlines how this should be done.

This guidance will cover:

- Purpose and context
- Assessing climate risks and opportunities
- Developing an adaptation plan

PURPOSE AND CONTEXT

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Purpose

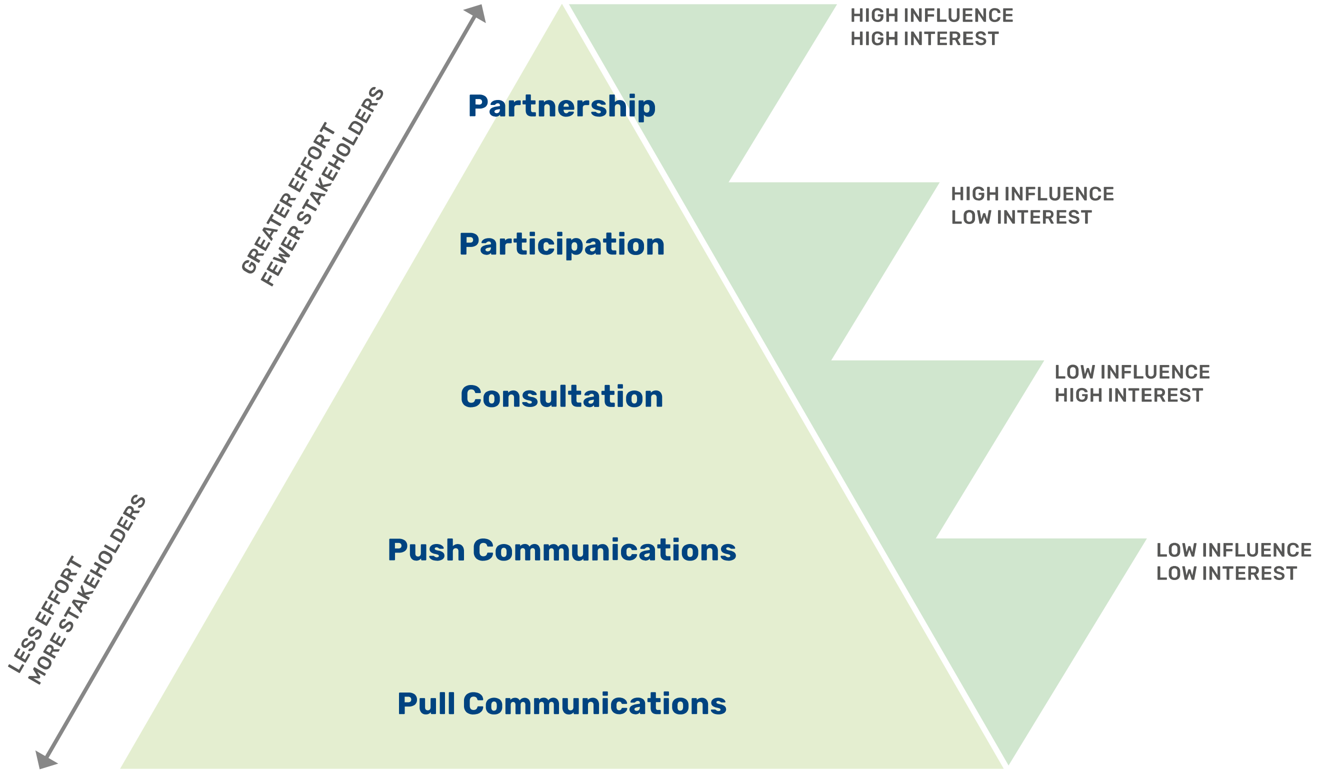
- Improve the resilience of your healthcare assets to current climate risks and future climate change
- This will assist you in:
  - protecting vulnerable sites, services and communities
  - reducing the cost of service disruption
  - complying with legal requirements

Context

- Key legislation and policy:
  - Paris Agreement 2015
  - UN Sustainable Development Goals 2015
  - Climate Change (Scotland) Act 2009
  - UK Civil Contingencies Act 2004
  - Scottish Climate Change Adaptation Programme 2019–2024
  - NHSScotland Standards for Organisational Resilience 2nd Edition May 2018

Climate Change Risk Assessment and Adaptation Planning Tool

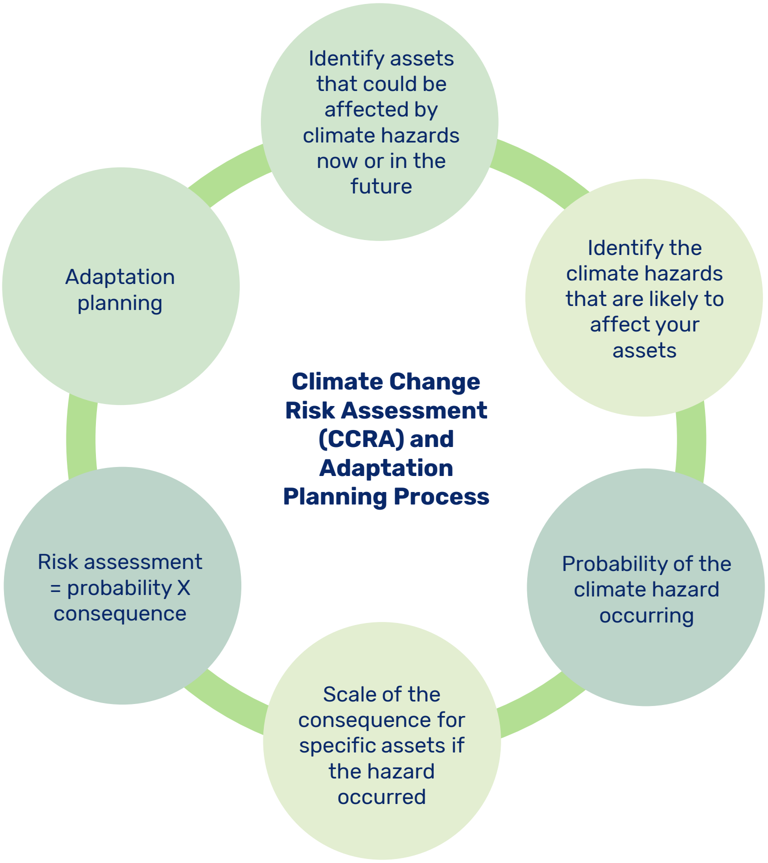
- What?
  - Excel Tool to assist identification of climate risks and prioritisation of adaptation actions.
- How?
  - Combination of desk based assessment and dialogue with partners (internal and external).
  - Important to engage the right people to inform and ensure the delivery of a realistic adaptation plan.



Who should be involved?

- A lead individual should be identified to lead the CCRA and adaptation planning process. This could be a member of staff with healthcare asset and / or resilience responsibilities.
- A wider Steering Group is recommended comprised of representatives from a range of departments and potentially including organisations from outside the NHS (e.g. local authorities, voluntary organisations, SEPA).
- It is important that the CCRA and adaptation planning process is considered as part of each Board's usual risk management requirements and processes rather than stand alone.

Climate Change Risk Assessment (CCRA) and Adaptation Planning Process



ASSESSING CLIMATE RISKS AND OPPORTUNITIES

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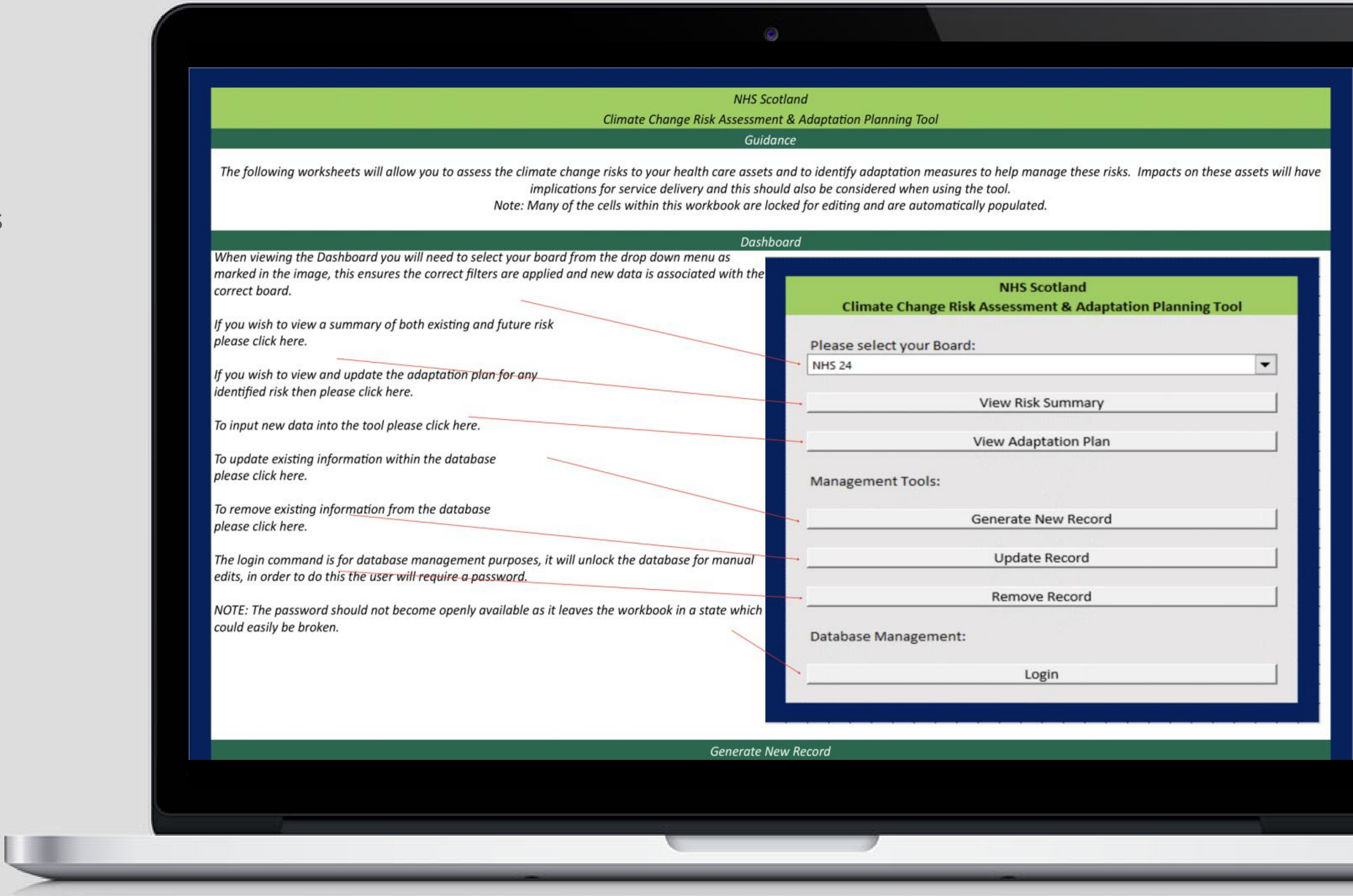
Key definitions for terms used within this guidance and the CCRA Tool:

- Adaptation: the term used to describe responses to the effects of climate change. An adjustment in natural or human systems in response to actual or expected climatic stimuli or effects, which moderates harm or exploits beneficial opportunities
- Assets: buildings and other physical entities owned, managed or used by Health Boards in delivering their services
- Climate change: any change in climate over time, whether due to natural variability or as a result of human activity
- Climate hazards: climate related hazards are secondary effects that result from climate drivers. Examples include flooding due to increased precipitation or drought due to decreased precipitation
- Impact: a specific change in a system caused by its exposure to climate change. Impacts may be harmful (threat) or beneficial (opportunity)
- Measures: interventions to help adapt to climate change
- Probability: the likelihood of a threat, hazard or general outcome occurring where this can be estimated probabilistically
- Residual risk: the risk that remains after interventions have been implemented
- Resilience: the ability of a system to absorb disturbances, whilst still retaining the same basic structure and ways of functioning as well as its capacity to self-organise and adapt to stress and change
- Risk: the probability of something happening multiplied by the impact this could have if it occurred

Overall approach

- The Climate Change Risk Assessment and Adaptation Planning Tool for Healthcare Assets (CCRA Tool) has been developed for use by territorial and national Health Boards.
- The CCRA Tool provides a methodology for conducting a risk assessment for both existing and new healthcare assets:
  - Existing assets include all healthcare assets already in place with a remaining design life of less than 30 years
  - New assets include all planned or potential new healthcare assets and the refurbishment of existing assets within the next 30 years
- The Tool can also be used to assess climate risks to ‘core’ and ‘support’ services as well as ‘physical’ assets.



Generating a new record

The CCRA Tool can be downloaded from the members login area of the Sustainability Action website at sustainabilityaction.scot.nhs.uk

- In the Dashboard tab select your Health Board in the drop down box.
- The Dashboard provides options to generate a new record, update an existing record or remove a record.
- On first use select Generate New Record.
- Guidance for users is provided within the tool.

Existing or planned new healthcare asset(s)

Step 1 of the CCRA Tool

- Existing assets include all healthcare assets already in place with a remaining design life of less than 30 years.
- New assets include all planned or potential new healthcare assets and the refurbishment of existing assets within the next 30 years.
- Note: for the purpose of the risk assessment healthcare asset(s) also include existing or planned new 'core' and 'support' services where there is potential for the service to be affected by climate impacts.

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Identify healthcare assets that could be affected
Step 2 of the CCRA Tool

- Select the asset group which is likely to be affected by a climate hazard.
- The CCRA Tool provides the following pre-populated options:
  - GP surgeries & community health centres
  - Hospitals
  - Laundries
  - Offices
  - Core Services
  - Support Services
  - Vehicles
  - Care Homes

- Identify asset(s) on the basis of:
  - Review of relevant documentation (see Step 3) and discussion with colleagues
  - Previously affected by climate hazards
  - Potential to have a significant impact if affected e.g. a hospital with a large catchment area, GP surgery in remote community etc
  - As few assets are owned, the focus for the assessment is likely to be on current assets and considering climate projections for 2040
  - Where your Health Board serves the whole of Scotland, consider Scotland wide climate projections
  - Where staff and assets are located in specific localities, consider climate projections for that area
  - Where staff and assets are distributed nationally, use the most significant climate projections i.e. if temperature is projected to increase by 2°C on the west coast, 3°C inland and 4°C on the east coast, use 4°C

- Further work:
  - A site specific site based risk assessment may be required to assess vulnerability and increase the resilience of individual buildings

Desk based assessment plus consultation with colleagues

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Assessment of relevant climate hazards
Step 3 of the CCRA Tool

- The CCRA Tool identifies climate hazards that are likely to affect Scotland now or in the future:
  - Higher average temperature and extended periods of hot weather (including a heatwave)
  - Extended periods of dry weather and drought
  - Heavy downpours and driving rain (including changes in moisture content of air and soil)
  - Storm surge, coastal inundation and coastal erosion
  - Flooding (river, coastal, surface water, ground water, sewer)
  - Cold spells (including frost, snow and ice)
  - Combined climatic effects (including storms, high winds, lightning, fog, mist and low cloud)

- It is important to consider all of these climate hazards in terms of both historic impacts and potential future impacts,

- An assessment should be carried out for each climate hazard where it is likely to affect the asset(s) being assessed.

- Note: Coastal inundation and coastal erosion is not directly relevant for Health Boards with no coastline.

Available data sources

- UKCP18: https://ukclimateprojections.metoffice.gov.uk
- SEPA flood maps: http://map.sepa.org.uk/floodmap/map.htm
- SEPA NFRA flood risk data explorer: www.sepa.org.uk/data-visualisation/nfra2018
- NHSScotland Climate Change Impact Assessments and indicative flood risk assessments 200+ sites
- NHSScotland mapping tool assesses the risk and vulnerability of healthcare assets to climate change impacts across Scotland https://nhs.tellus-toolkit.com

Desk based assessment plus consultation with colleagues

Consideration of previous climate impacts
Step 4 of the CCRA Tool

- The CCRA Tool is focused at the Health Board level, but can usefully assist identification of specific assets that have previously been affected by climate impacts and how.

- To identify previous climate related impacts, discuss with colleagues (resilience lead, building managers, health & safety, estates and facilities staff etc) and review the following:
  - Daily incident reporting
  - Health and Safety reports
  - Estates and facilities meeting minutes and the Planning and Asset Management Strategy (PAMS)
  - Local Authority Local Climate Impact Profiles (LCLIPs)
  - High level Climate Change Impact Assessments (CCIAs) prepared for each NHS Board by HFS
  - High level Flood Risk Assessments (FRAs) produced for each NHS Board by HFS

National Health Boards

- Even though you may not own ‘physical’ healthcare assets, it is still important to identify any that have previously been affected to discuss with your landlord

- Also consider indirect impacts e.g. invoicing, salary payments delayed due to IT systems being affected by bad weather

- Identify specific access routes that have been blocked or disrupted which has affected delivery of services

- Of key importance is identifying a central contact who can provide information on previous impacts e.g. your resilience lead

Desk based assessment plus consultation with colleagues

Probability of the climate hazard occurring
Step 5 of the CCRA Tool

- Focus on the probability or likelihood of a hazard occurring, not impacts.
- Time periods:
  - Probability of hazards occurring within the next 20 years for current assets (UKCP18 projections for 2040)
  - Probability of hazards occurring within the next 50 years for new assets (UKCP18 projections for 2080)
- Scoring approach provided in CCRA Tool Guidance
  - If the hazard already happens regularly it will be high probability
  - Consider the probability associated with climate projections
  - Consider (at a high level) overall vulnerability of assets e.g. if older buildings in need of refurbishment are likely to be more vulnerable to climate impacts
  - Don't take existing adaptation (e.g. defences) into account
- Sources of information:
  - Individual Board Climate Change Impact Assessments and Flood Risk Assessments, UKCP18 climate projections, NHSScotland mapping tool (Step 3)
  - Knowledge of previous events (Step 4)

Desk based assessment plus consultation with colleagues

National Health Boards

- A range of assets could be affected by climate hazards e.g. ambulance depots, offices, blood centres
- Highlight any assets that are critical for services delivered
  - e.g. ambulance control rooms that would be seriously impacted if either IT failure or access problems affected people's ability to do their job or get to work

Identify any specific asset(s) that could be affected

Step 6 of the CCRA Tool

- Identify asset(s) on the basis of:
  - Review of specific relevant documentation (Steps 3, 4 and 5) and discussion with colleagues
  - Previously affected by climate hazards (Step 4)
  - Potential to have a significant impact if affected e.g. a hospital with a large catchment area, GP surgery in remote community etc
- Further work:
  - A site specific site based risk assessment may be required to assess vulnerability and increase the resilience of individual buildings.

Desk based assessment plus consultation with colleagues

Identify potential impacts
Step 7 of the CCRA Tool

- A range of potential impact categories have been provided within the CCRA Tool:
  - Transportation and site access (e.g. restricted access for staff, patients, suppliers, waste disposal, damage to transport infrastructure)
  - Essential supplies (e.g. supply chain disruption, breakdown in energy supply, utilities, fuel, food, drugs, medical supplies, equipment, PPE, blood)
  - Structural (e.g. damage to foundations, bearing walls, roofs, staircases, floors)
  - Building components and equipment (e.g. IT and communication systems, climate control and air conditioning services, ventilation and air conditioning equipment, essential pipe systems, elevator services, waste disposal)
  - Emergency systems (e.g. backup supplies)
  - Increasing number of patients (e.g. following a severe weather event)
  - Other (select own)

Details about the impact

- Select all potential impact categories that apply to the asset(s) being considered.
- A free text box for additional information is provided for each impact category.
- Enter details about the potential impact e.g if Essential Supplies is selected describe the supplies that may be vulnerable and why.

National Health Boards

- It is important to consider wider impacts. For example, if there is no access to buildings for staff, supplies are disrupted or buildings and essential equipment is damaged, what impact would this have on running the service?

Desk based assessment plus consultation with colleagues

Scale of consequence if the climate hazard occurred

Step 7 of the CCRA Tool (continued)

- Focus is on the consequence of the hazard occurring, not on any likelihood of it occurring.
- Review documentation on previous and potential impacts (Steps 4 and 6) and discuss with colleagues.
- Score the potential consequence using the guidance contained in the CCRA Tool.
- Note: the risk management approach within the CCRA Tool may be adapted or replaced with your own Boards approach as long as the same approach is used consistently.

Risk summary

- The results of the previous steps will be set out in the Risk Summary of the CCRA Tool which can be accessed from the Dashboard.
- These are also automatically carried across to the Adaptation Plan, where they can be filtered according to risk status (i.e. highest to lowest level of Risk Exposure).

National Health Boards

- It is important to consider wider impacts. For example, access to buildings for staff or supplies is disrupted or buildings and IT systems are damaged, what impact would this have on running the service?

Desk based assessment plus consultation with colleagues

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ADAPTATION PLANNING

Risk summary results and current adaptation

Step 8.1 of the CCRA Tool

- Automatically populated from risk summary:
  - Risk type i.e. existing or future
  - Asset group
  - Relevant climate hazard
  - Assets previously affected
  - Probability score (likelihood of the climate hazard occurring)
  - Assets at risk
  - Impact category
  - Details of impact
  - Consequence score
  - Risk exposure score (probability x consequence)
- Identify current adaptation measures
  - Measures currently in place to manage/reduce risk e.g. shutters/air-conditioning to prevent over-heating, flood resistant measures e.g. flood doors, emergency plans
  - Identify where these measures have come from e.g. Business Continuity Plan or Capital Investment Programme

Desk based assessment plus consultation with colleagues

Management approach for new measures
Step 8.2 of the CCRA Tool

- Discussion required with colleagues/partners to identify the appropriate approach

- Drop down menu provides the following options:
  - **Tolerate:** with existing measures in place, risk is acceptable and no further action required
  - **Treat:** actions needed to manage the risk – this requires identification of adaptation measures
  - **Share:** responsibility for the risk can be shared with a partner organisation (for example potential local road access impacts is the responsibility of local authorities)
  - **Terminate:** residual risk likely to be too high to accept so asset needs to be decommissioned or relocated
  - **Combined:** there may be cases where one or more management approaches are applicable for a given impact for example there may be a short term measure to treat the risk and a longer term measure which is shared with a partner organisation). In this instance the 'combined' measure can be selected and the approaches recorded in the recommended adaption measures (Step 8.3)

Consultation with colleagues and partners

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Recommended adaption measures
Step 8.3 of the CCRA Tool

- Recommended adaptation measures
  - Identify specific adaptation measures related to the individual risks
  - Could be practical action e.g. increased shading, Sustainable Urban Drainage Systems (SUDS) and other flood mitigation measures, building the adaptive capacity of the Board through training or emergency plans
- Useful sources of information:
  - https://www.ukcip.org.uk/wizard/adaptation-options/
  - https://adaptationscotland.org.uk/how-adapt/our-adaptation-process/take-action

National Health Boards

- If buildings/vehicles are leased rather than owned
  - Building risks will need to be addressed via procurement routes e.g. rental/tenancy agreements, service level agreements etc. to include resilience to extreme weather
- Suppliers
  - Contracts should include reliability clauses that would require suppliers to ensure delivery during extreme weather thus requiring suppliers to have business continuity/emergency plans

Consultation with colleagues and partners

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Assessment of residual risk
Step 8.4 of the CCRA Tool

- Identify the level of risk that would remain with the proposed measure (and any existing measures) in place

- Enter the residual risk score and any residual risk comments as descriptive text

Risk owner, delivery partners and timeline
Step 8.5, **8.6** and **8.7** of the CCRA Tool

- Risk owner and delivery partners
  - Identify the individual and department that will own the risk and be responsible for planning and implementing adaptation measures and monitoring
  - NB: National Boards can identify territorial Boards as delivery partners and vice versa
  - Discuss and agree with the lead and delivery partners

- Timeline
  - Identify and agree (with lead and delivery partners) the overall time period for delivery. A range of time periods is provided within the CCRA Tool, including ongoing

Cost and monitoring
Step 8.8 and **8.9** of the CCRA Tool

- Cost
  - Assess and agree (with lead and delivery partners) ballpark costs. Ranges are provided within the CCRA Tool including an option to identify a specific cost where known
  - The CCRA Tool tool does not include a cost-benefit appraisal, it is expected that usual NHS processes would be conducted

- Monitoring approach
  - Identification of ongoing monitoring regime

Overview of risks assessed
Risk Assessment Status

- The RA Status tab within the CCRA tool provides an overview of risks that have been assessed. When a risk for a particular asset group has been assessed against a climate hazard and a risk score calculated, the relevant box will change from N to Y and will be shaded green.

SUSTAINABILITY ACTION

FOR FURTHER INFORMATION PLEASE CONTACT

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