

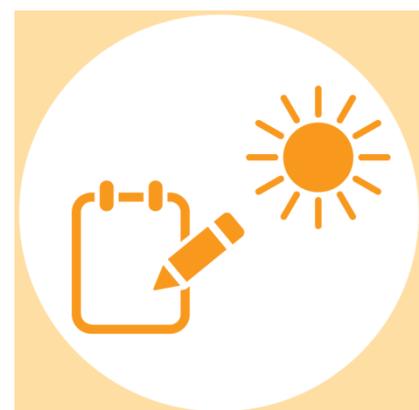


Heatwave Plan

Version 8

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Version Control

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7	Updated following annual review and block assessment update	Emergency Preparedness Team	May 2015	May 2016
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1. Purpose

The purpose of the Leeds Teaching Hospitals NHS Trust (LTHT) Heatwave Plan is to provide guidance on how to protect patients, public and staff from the impact of a heatwave.

2. Objectives

The objectives of the plan are to:

- Describe roles and responsibilities of key staff in preparing, alerting and preventing people from the major avoidable effects on health during a heatwave.
- Describe high risk factors and groups of people in the event of a heatwave.
- Describe heat-related illnesses and their consequences.
- Provide key messages to staff and patients to prevent heat-related illness and heat-related problems.
- Define how the Met Office Heat-Health Watch Alert system will operate in England from 1 June to 15 September.
- Ensure measures are taken to avoid estate and equipment failure (including computers and other hospital equipment).
- Provide advice on the supply of ice (within infection control restrictions).
- Ensure business continuity arrangements are in place.
- Link to appropriate websites and resources.
- Provide action cards which are simple to operate and ensures clarity of roles and responsibilities.

This plan is part of the Trust's Emergency Preparedness, Resilience and Response framework and links to the Major Incident Plan, which is available on the Trust intranet site:

<http://lthweb/sites/epr/>.

3. Background

By 2040, it is predicted that an event similar to that experienced in France and Central Europe in 2003 will happen every year.

In Northern France in August 2003, unprecedented high day and night-time temperatures for a period of two weeks resulted in 15,000 excess deaths. The vast majority of these were among older people. The evidence conveyed that these summer deaths were as a result of heat-related conditions.

In July 2013 there was a heatwave in the UK. Met Office statistics show that it was the warmest in the national record going back to 1910, behind 2006 and 1983. This heatwave was more notable for its duration rather than its intensity and was the most significant heatwave since July 2006. The Trust activated part of the LTHT Heatwave Plan by purchasing an additional 50 fans and distributing them across ward areas to help reduce heat build-up and improve patient comfort. As of 2020, risk assessment is required for the use of fans in clinical and non-clinical areas within the organisation to Infection and Prevention considerations.

4. Climate Change Act and Heatwave Plan for England

Climate change means heatwaves are likely to become more common in the UK. Therefore it is important to provide guidance on how to reduce the impact they will have upon the patients, public and staff at LTHT. The Climate Change Act 2008 makes it a requirement for all statutory sectors, including the Health Sector; to have robust adaptation plans in place.

This plan is based on the Heatwave Plan for England (published by Public Health England supported by NHS England. Core elements of the Heatwave Plan for England -are:

- Strategic planning
- Alert system (advance warning and advice over the summer)
- Heatwave and summer preparedness

- Communication with the public
- Working with service providers

For more information visit this website: <https://www.gov.uk/government/publications/heatwave-plan-for-england>.

5. Plan Effect

The LTHT Heatwave Plan will be activated during the period of 1 June until 15 September of each year. This is in line with Met Office reporting periods. Whole or parts of this plan may be activated during periods of exceptional weather deemed appropriate by the Emergency Planning Team under the authorisation of an Executive Director. Should a heatwave occur, this plan sets out what needs to happen before and during the event. Information will be cascaded as necessary to the Severe Weather Group (see Appendix 6 for the circulation list).

6. Roles and Responsibilities

6.1. Chief Executive

- Ensure that there is an effective plan relating to business continuity in the event of a heatwave.

6.2. Chief Operating Officer (Director for Emergency Preparedness)

- As delegated board lead for Emergency Preparedness they will ensure the development of the Heatwave Plan.
- Ensure the plan is in line with major incident policies and procedures.
- Ensure this plan is monitored as part of the Emergency Planning Coordinating Group (EPCG).

6.3. Head of Resilience

- Ensure that the plan is reviewed annually and updated as new information emerges.
- Ensure the plan is exercised and tested.
- Update the Executive Directors and CSU General Managers in the event of a heatwave.
- Ensure a process is in place to cascade Heat-Health Watch Alerts to the Severe Weather Group, CSUs and Trust wide in and out of hours.
- In conjunction with the Executive Directors and CSU General Managers co-ordinate the Trust's response in the event of a heatwave.
- Liaise with Estates to review and update the block assessment (see **Appendix 5**).

6.4. CSU General Managers

- Oversee the effective implementation of the plan within their CSUs.
- Cascade Heat-Health Watch Alerts within CSUs.
- Ensure appropriate business continuity plans are in place in order to maintain an appropriate level of service.
- Ensure that staffing levels will be sufficient to cover the anticipated heatwave period.
- Consider/facilitate the cancellation of appropriate patient related activities.

6.5. Director of Estates & Facilities Designate the following responsibilities to the Operational Heads of Estate for SJUH, LGI & Peripherals:

- Ensure the appropriate maintenance of ventilation, air conditioning, refrigeration and cooling systems within the Trust.
- Facilitate the hiring of portable air conditioning units where possible and as required.
- Facilitate the instruction of domestic and ward-hosting staff to increase number of times iced water (in conjunction with infection control guidelines) and squash is delivered to patients.

- Ensure that departments have the appropriate sundries required during heatwave period.
- Instruct catering staff to provide diet appropriate to evolving situation.
- Work with the Associate Director of Estates to ensure there is an annual assessment of cool room availability in LTHT.

6.6. Clinical Directors / Lead Clinicians

- Clinical oversight and assurance at CSU level that plans are safe and robust.

6.7. Head of Communications / On Call

- Co-ordinate media correspondence.
- Co-ordinate communications to Trust staff.
- Disseminate Trust wide Heat-Health Watch Alerts.

6.8. Matrons / Heads of Profession

- Ensure staff are aware of their responsibilities.
- Manage flexibility within shift patterns and consider reducing the number of shifts worked (by possibly increasing hours each shift).
- Ensure arrangements are in place for maintaining continuity of services.

6.9. Emergency Planning Officer

- Facilitate the writing, testing and subsequent updating of this Heatwave Plan.
- Ensure the plan is in line with national and local guidance.
- Disseminate Heat-Health Watch Alerts to Severe Weather Group and liaise with Communications Team to cascade message Trust wide.

6.10. Clinical Site Managers

- Out of hours - assess impact/risk and if required:
 - Disseminate Heat-Health Watch Alerts to Severe Weather Group and CSUs and liaise with Communications Team to cascade message Trust Wide.
 - Assess impact/risk and oversee the effective implementation of the Heatwave Plan
 - Escalate to senior management on-call team.

See Appendix 1 for Action Cards.

7. High Risk Factors and Groups At Risk

Severe hot weather is dangerous to anyone. However, there are specific factors which increase an individual's risk of serious harm.

7.1. Older Age

- Individuals who are over 75 years old.
- Those living on their own and who are socially isolated.
- Those living in a care home.

7.2. Chronic and Severe Illness

- Heart conditions
- Diabetes and obesity
- Respiratory disease
- Renal insufficiency
- Parkinson's disease and difficulties with mobility
- Peripheral vascular conditions
- Severe mental illness
- Alzheimer's Disease or associated diseases.

7.3. Medications

Medications can affect thermoregulation and electrolyte balance. This makes those who take specific medication more vulnerable to overheating. For more information regarding the medications which can provoke or increase the severity of heatstroke visit this link:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/310605/10089-2902329-TSO-Heatwave-Advice_for_Health_Professionals_ACCESSIBLE.pdf

7.4. Inability to Keep Cool

These individuals have more difficulty in adapting their behaviour to keep cool:

- Babies and young children
- Certain types of Physical and Mental Impairments
- Individuals with Alzheimer's Disease
- Those bed bound
- Those with a high temperature due to an infection
- Those under the influence of too much alcohol or illicit drugs.

7.5. Environmental Factors

Factors which cause a higher risk of overexposure to heatwave conditions, for example:

- Being homeless
- Living a top floor flat or a high rise building
- Lack of air conditioning
- Activities or jobs in hot places or outdoors that include high levels of physical exertion.

7.6. Ramadan

Many members of the Muslim community may be fasting during they daylight hours in the month of Ramadan. It is common to have one meal just before sunrise and an evening meal after sunset during Ramadan. During hot weather dehydration is a common and serious risk.

Guidance has been produced to help ensure members of the Muslim community have a safe and healthy Ramadan. [Ramadan Health Guide: A guide to healthy fasting](#) produced in association with the NHS with further information available on [NHS Choices – Healthy Ramadan](#). The dates for Ramadan for 2020 were from 23rd April 2020 to 23rd May.

8. Heat-Related Illnesses

The main cause of illness and death during a heatwave are respiratory and cardiovascular diseases. There are other specific heat-related illnesses:

Heat-related Illness	Cause
Heat cramps	Dehydration and loss of electrolytes, often following exercise.
Heat rash	Small, red, itchy papules.
Heat oedema	Mainly in the ankles, due to vasodilation and retention of fluid.
Heat syncope	Dizziness and fainting, due to dehydration, vasodilation, cardiovascular disease and certain medications.
Heat exhaustion (more common)	Occurs as a result of water or sodium depletion, with non-specific features of malaise, vomiting and circulatory collapse, and is present when the core temperature is between 37°C and 40°C. Left untreated heat exhaustion may evolve into heatstroke.
Heatstroke	Can become a point of no return whereby the body's thermoregulation mechanism fails. This leads to a medical emergency, with symptoms of confusion and disorientation, convulsions, unconsciousness, hot dry skin and core body temperature exceeding 40°C for between 45 minutes and eight hours. It can result in cell death, organ failure, brain damage or death. Heatstroke can be either classical or exertional (e.g. in athletes).

For further information see: <http://www.nhs.uk/Conditions/Heat-exhaustion-and-heatstroke/Pages/Introduction.aspx>

Whatever the underlying causes of heat-related symptoms, the treatments are always the same, move the person to somewhere cooler to bring their temperature down.

9. Protective Factors

9.1. Keep Cool and Stay out of the Heat

The key message for preventing heat-related illness and death is to **keep cool**. The best ways to do this include the following:

- Stay out of the sun from 11.00-15.00.
- If you have to go out in the heat, walk in the shade, apply sunscreen and wear a hat and light scarf.
- Avoid extreme physical exertion.
- Wear loose fitting cotton clothing, where possible
- When wearing PPE take regular breaks
- Cool yourself down by drinking plenty of cold drinks, and avoid excess alcohol, caffeine and hot drinks. Increase your intake of cold foods with high water content, for instance, salads and fruit.
- Take cool showers/baths. Sprinkle water over the skin or clothing. Use a damp cloth on the back of your neck.
- Be alert for others, particularly the elderly, ill and children ensuring they are able to keep cool.

9.2. Keep your Environment Cool

- Keep windows which are exposed to the sun closed during the day, and open windows at night when the temperature has dropped.
- Close curtains that receive morning or afternoon sun.
- Use a thermometer in your main living room to keep check on the temperature.
- Turn off electrical equipment and unnecessary lighting as they generate heat.
- Keep indoor plants and bowls of water in the house as evaporation helps cool the air.
- If possible, move to a cooler room, especially for sleeping.
- Risk Assessment is required before using in the workplace due to infection and prevention considerations.

This information should be shared with patients.

10. Proactive Measures to Reduce Heat Build Up

Heatwaves can occur suddenly, and fast rises in temperature affect vulnerable people very rapidly. Staff must have an awareness of the patients who are at particular risk, and identify what help they might need.

The temperature of 26°C is the threshold at which many vulnerable patients find it difficult to cool themselves naturally if sweating is impaired. This impairment may be due to old age, sickness or medication.

It has also been identified that high risk patients may suffer undue health effects including worsening cardiovascular or respiratory symptoms at temperatures exceeding 26°C. For this reason proactive measures (see **Appendix 1 Action Cards**) must be taken by staff for patients, at increased risk, to minimise the effect of the heat on their health. If temperatures exceed

26°C, attempts should be made to move high-risk individuals to a cooler area; that is 26°C or below.

If possible all attempts should be made within the Trust to use naturally shaded rooms or those with air conditioning. If required to cool a department, room or ward the use of portable air conditioning units may be appropriate. This should be discussed with staff from the Infection, Prevention & Control Team and Estates Department to assess if this is practical.

11. Use of Fans

Fans must not be used in the following areas:

- In high-risk areas including operating rooms, critical care room units, transplant units, dialysis units.
- In areas where immune-compromised patients receive care, for examples, oncology units (single-use battery-operated fans are in use in these areas).
- A patient in source isolation with a known or suspected infection including Covid-19, or in areas / wards where there are suspected or confirmed Covi-19 cases.
- In rooms with directed airflow e.g. positive or negative pressure rooms.
- In areas where sterile supplies are stored or where medical device reprocessing occurs, for example, hospital sterile services department, endoscopy units.
- To cool corridor areas as this increases the risk of air blowing across a number of people.
- For cooling purposes at nurses' stations as this increases the risk of air blowing across a number of people.

The advice for clinical areas is: <https://www.leedsth.nhs.uk/assets/6938154ef8/Electric-fans-risk-assessment-clinical-areas.png>

In addition, the non-clinical risk assessment tool for the use of portable electric fans can be located at: <https://www.leedsth.nhs.uk/assets/ad6e61cc73/Risk-assessment-for-fans-in-non-clinical-areas-AD-v-2-2020.pdf>

12. Block Assessment

The majority of wards are not generally supported by air conditioning and hence lack the benefit from cooling during a heatwave. An annual block assessment of cool rooms across all Trust sites is undertaken by the Estates Department to identify those with mechanical ventilation (low risk) and areas with a higher risk due to their patient occupancy and their total reliance on natural ventilation. This assessment was reviewed and updated during May 2020 (see **Appendix 5**).

The majority of wards are not generally supported by air conditioning and hence lack the benefit from cooling during a heatwave. Emergency Departments and wards classed as critical care/theatres are air conditioned and have the benefit this brings.

In the event of a heatwave most wards will be reliant upon natural ventilation and have limited ability to cool down via air conditioning systems in periods of high external temperature. Gledhow Wing (Elderly Wards) have been assessed as a higher risk due to their patient occupancy and their total reliance on natural ventilation.

13. Refrigeration

There are various refrigerated cold storage facilities in the Trust. The Catering Department, Blood Bank, Mortuary and Science Laboratories are where the service is classed as essential and power is maintained to these systems by the emergency standby generators. High temperature alarms are installed to critical services, monitored through either the 24hr-manned reception/Switchboard or via the Estates Department.

14. Temperature Sensitive Equipment

There are various computer rooms serving IT systems around the Trust. Each 'hub' room has individual climate control. In the case of the PACs hub room the system is served by 2 DX systems. Each DX system in this case acts on duty or standby. In some hub rooms, no secondary/back up system is available to maintain the computer room environment if the existing internal unit fails or if one or two external units fail; the room environment will not be maintained.

In the event of a failure we would install a secondary independent system, to provide additional capacity and resilience to the installation, should a failure occur to the main system.

14.1. Computer Room Cooling

The computer rooms are cooled by several monitored air conditioning units per computer room. Should the temperature rise to an unacceptable level alerts are sent immediately to Trust staff.

14.2. MRI Scanner Suites

Refrigeration equipment is utilised for a number of components. The MRI scanner suites contain temperature sensitive equipment and also have a dedicated chilled water supply. Failure of the units that supply chilled water and air cooling would cause the MRI systems to shut down. Some, but not all of these systems are on essential electrical supply. There is limited resilience built into some of the units supplying chilled water. Otherwise there are no backup facilities.

14.3. Medicines Management

As a contingency, Medicines Management will maintain a number of fridge and freezer units, but this would not necessarily be available to support the rest of the Trust.

In a heatwave situation Medicines Management may need the spare capacity in fridges for goods which would normally be on open shelving. It may be possible to support wards with drug storage, but a risk assessment should be taken if fridge and freezer storage becomes an issue.

15. Air Conditioned Rooms

15.1. Emergency Department

The Emergency Department ventilation system is served by chilled water refrigeration units to air condition that feeds the department.

15.2. Operating Theatres

The theatre ventilation systems are served by either individual or joint ventilation systems served in the main by a common chilled water system. DX cooling systems are not recommended for theatre installations.

For common chilled water systems, these tend to feed whole sites or significant parts of sites and have increased capacity to feed dedicated plant. They generally provide a greater degree of standby capacity and resilience during high temperature periods but lack flexibility in that they only feed fixed air conditioning plant, hence the areas fed by these plants.

15.3. Ward Accommodation

Cooling facilities are not usually installed in ward accommodation. The majority of general wards are not generally supported by air conditioning and hence lack the facility to benefit from cooling during a heatwave. Wards classed as critical care i.e. ITU/ICU are air conditioned and will have the benefits this brings.

In the event of a heatwave most wards will be reliant upon natural ventilation and have limited ability to cool down in periods of high external temperature.

Where installed, ventilation plant can be operated during night times to maximise the effect of night time cooling upon the building fabric. This can be achieved in wards without air conditioning by opening windows at night to reduce heat levels.

15.4. X-Ray Rooms

Each x-ray room is maintained by a single DX cooling system. No back up air conditioning systems are installed. Back up facilities is provided by relocation of the x-ray service to another x-ray room.

16. Infection Control Restrictions

16.1. Ice

Ice machines have been shown to provide a potential reservoir for the growth of pseudomonas and other opportunistic hydrophilic organisms. It is therefore strongly advised that they are not used in clinical practice particularly in areas with immunocompromised patients.

Ice machines that have already been purchased and are being used within LTHT must be appropriately maintained and have evidence of a maintenance contract. Machines must be cleaned regularly and a robust cleaning schedule must also be in operation.

Ice trays (plastic /rubber or silicone) should not be used to make ice for patients. Ice should be made in single use plastic compartment bags (one per patient) these should be labelled with the patient's name, unit number and the date that the ice was made. Once the patient is discharged any remaining ice must be discarded.

Ice should be made using water from a designated drinking water tap; which has been clearly labelled as such by the Estates Department.

In ward areas containing severely immunosuppressed patients (such as oncology) water should be provided from a filtered source. Where filtered water is not available the use of sterile bottled water is acceptable.

16.2. Source Isolation

During extreme hot weather it may be necessary or requested by patients in source isolation to have the side room door left open due to excessive heat within the room. In this situation a risk assessment must be undertaken in conjunction with the Infection Prevention and Control Team and the outcome clearly documented within the nursing kardex an IR1 should also be completed indicating any breaches in Infection Prevention and Control policies.

For further advice please contact the Infection Prevention and Control Team.

17. Heat-Health Watch Alert System

The Heat-Health Watch alert system will operate in England from 1 June to 15 September each year. The system comprises five main levels of response (Levels 0-4) outlined in *Figure 1* on the following page, together with LTHT responsibilities. Levels 2-3 are based on threshold day and night-time temperatures as defined by the Met Office.

For the Yorkshire and Humber region a heatwave will be declared when the day-time temperature reaches 29°C and the night-time temperature does not fall below 15°C. For an example of the Heat-Health Watch Alert see **Appendix 4**.

Figure 1: Heatwave Alert Levels

Heatwave Alert Level	National Heatwave Plan	LTHT Responsibilities
Level 0 Long-term planning All year	Long-term planning includes year-round joint working to reduce the impact of climate change and ensure maximum adaptation to reduce harm from heatwaves. This involves influencing urban planning to keep housing, workplaces, transport systems and the built environment cool and energy efficient. Long-term heatwave planning is a key consideration highlighted in the National Adaptation Programme (NAP), which sets out actions to address the risks identified in the UK	Work with commissioners to develop longer term plans to prepare for heatwaves.

	Climate Change Risk Assessment.	
Level 1 Heatwave and summer preparedness programme 1 June - 15 September	Summer preparedness runs from 1 June to 15 September when a Level 1 alert will be issued. The Heatwave Plan will remain at Level 1 unless a higher alert is triggered. During the summer months, social and healthcare services need to ensure that awareness and background preparedness are maintained by implementing the measures set out in the Heatwave Plan.	LTHT will check the resilience of their estates and equipment, especially Medical and IT systems, to ensure that where necessary they can be maintained at working temperatures and there is no risk of system failure through overheating.
Level 2 Heatwave is forecast - alert and readiness 60% risk of heatwave in the next 2-3 days	This is triggered as soon as the Met Office forecasts that there is a 60 per cent chance of temperatures being high enough on at least two consecutive days to have significant effects on health. This will normally occur 2–3 days before the event is expected. As death rates rise soon after temperature increases, with many deaths occurring in the first two days, this is an important stage to ensure readiness and swift action to reduce harm from a potential heatwave.	LTHT will cascade the information to staff via Trust intranet and emails. The Head of Resilience will inform all CSUs to be on alert and have plans at the ready. Implement Heatwave Level 2 Actions (<i>refer to Appendix 1 Action Cards</i>)
Level 3 Heatwave Action Temperature reached in one or more Met Office National Severe Weather Warning Service regions	This is triggered as soon as the Met Office confirms that threshold temperatures have been reached in any one region or more. This stage requires specific actions targeted at high-risk groups. A heatwave emergency may be declared locally, regionally or nationally.	Continue with Heatwave Level 2 Actions and implement additional Heatwave Level 3 Actions (<i>refer to Appendix 1 Action Cards</i>) LTHT command and control arrangements will be established Assess REAP Level
Level 4 Major incident - emergency response Central government will declare a Level 4 alert in the event of severe or prolonged heatwave affecting sectors other than health	Level 4: National Emergency This is reached when a heatwave is so severe and/or prolonged that its effects extend outside health and social care, such as power or water shortages, and/or where the integrity of health and social care systems is threatened. At this level, illness and death may occur among the fit and healthy, and not just in high-risk groups and will require a multi-sector response at national and regional levels. The decision to go to a Heatwave Level 4 is made at national level and will be taken in light of a cross-government assessment of the weather conditions, co-ordinated by the Civil Contingencies Secretariat (Cabinet Office).	In the event of a 'major incident' being declared, all existing emergency policies and procedures will apply and LTHT will institute it's Major Incident Plan. This will provide dedicated command and control structures to co-ordinate the staff and resources of the Trust and facilitate links to external organisations. During a red emergency it is possible NHS England (Yorkshire and Humber) Command Arrangements will be invoked.

The Chief Operating Officer is the lead Director for Emergency Preparedness and any contact/notification from the Department of Health/Public Health England must be passed to the Chief Operating Officer in the first instance. They will then ensure in conjunction with the Head of Resilience, that the appropriate action is taken and is relevant to the level identified by the Department of Health/Public Health England. The Trust's Head of Resilience will regularly update the Chief Operating Officer of the current alert level.

Details of the current alert level during the summer period are available from the following Met Office website: <http://www.metoffice.gov.uk/public/weather/heat-health/#?tab=heatHealth>

Additional information will be made available by public broadcasts, through the media and directly from the Department of Health/Public Health England.

While Heat-Health Watch is in operation, Public Health England will monitor the number of calls people make to NHS 111 and the amount of visits made to a sample of GP practices to assess

how people's health is affected by the weather and to give some insight into how well services are responding.

18. Severe Weather Group

Heat-Health Watch Alerts Level 2 and above will be circulated to the Severe Weather Group in and out of hours. See **Appendix 6** for details of the Severe Weather Group circulation list and required actions.

19. LTHT Working Conditions

19.1. Staff Precautions

- Staff should run cold water taps to draw down cooler water for drinking.
- Always use designated drinking water tap; which has been clearly labelled by the LTHT Estates Department.
- Avoid staying outside between 11:00 – 15:00.
- Ensure adequate fluid intake.
- Those working outside, try working at cooler parts of the day like the morning, try staying in the shade and wearing a hat.
- Ensure staff have increased regular breaks.
- Encourage light, loose cotton clothing within uniform limits. Staff may be allowed to not wear tights.
- Recommend cold food, particularly salads and fruit with high water content.

19.2. Before the Heatwave

In advance of a heatwave ensure that the physical environment will minimise the effects of hot weather by taking the following precautions:

- Check that where possible windows can be shaded. *Remember the use of metal Venetian blinds may make conditions worse.* If these are fitted, check they can be raised and check with Estates about their suitability.
- Ensure there are no problems opening windows to facilitate ventilation, including security considerations. In all patient areas window openings are restricted to no more than 100mm to prevent patients falling from our buildings.
- Test cooling or air conditioning systems work properly if available; consider in good time the use of additional cooling systems and if they can be used, as some areas cannot support additional electrical loading.
- Monitor the long-range weather forecasts issued by the Met Office on their website.

19.3. During a Heatwave

It is important to remember the welfare of staff working within the organisation during any period of extreme temperature. Precautions can be made at ward and departmental level to reduce the likelihood of heat related problems for members of staff.

All staff should be made aware of the problems that might arise whilst working during a heatwave and members of staff may also suffer from heat related conditions. Individuals and managers have a responsibility to monitor themselves and colleagues against these additional risks and what measures can be taken to mitigate these conditions (see section on 'Heat-Related Illnesses').

- If possible aim to keep the air temperature at or below 25°C.
- Ensure water and if possible a supply of ice is widely available (ice should be made/stored and used within infection, prevention and control guidance).
- Always use designated drinking water tap; which has been clearly labelled by the LTHT Estates Department

- Keep a close eye on patients' temperature and ensure they are kept hydrated and kept comfortable.
- Where possible consider altering staff rotas and using flexible working practices to minimise exposure to the mid-day heat.
- Consider screening windows.
- Watch for any symptoms of heat exhaustion amongst patients and staff.
- Advise staff to avoid drinks containing caffeine, very sweet drinks or alcohol.
- Monitor information from Public Health England and media broadcasts for further advice and guidance.
- Risk Assess any use of fans.

19.4. Monitoring and Surveillance

Public Health England will further explore improving surveillance of heat related deaths, for example, monitoring a sample of mortuaries, coroners and funeral homes during a heatwave period.

20. Further Information

20.1. Public Health England

The full Heatwave Plan and accompanying documents can be accessed on the Public Health England website: <https://www.gov.uk/government/publications/heatwave-plan-for-england>

Adapting to climate change government policies:

<https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2017>

20.2. NHS Choices

NHS Choices provides additional advice on heatstroke and other heat-related conditions:

<http://www.nhs.uk/Livewell/Summerhealth/Pages/Heatwave.aspx>

20.3. Information on Alert Levels

Details on the current alert level during the summer period are available from the Met Office:

<http://www.metoffice.gov.uk/public/weather/heat-health/#?tab=heatHealth>

20.4. Information on Air Quality

Heatwaves can worsen air pollution. There is an automated Freephone recorded information service run by Defra on **0800 55 66 77**, or Defra website: <http://uk-air.defra.gov.uk/>

Appendix 1 - Action Cards

Level 0	Actioned by	Date Actioned	Remarks
Long-term planning All year			
Work with commissioners to develop long-term plans to prepare for heatwaves	Managers		
Make environmental improvements to provide a safe environment for patients in the event of a heatwave	All Staff		
Ensure business continuity plans cover extreme weather such as heatwaves	Business Continuity Champions		

Level 1	Actioned by	Date Actioned	Remarks
Heatwave and summer preparedness programme 1 June - 15 September			
LTHT will check the resilience of their estates and equipment, especially Medical and IT systems, to ensure that where necessary they can be maintained at working temperatures and there is no risk of system failure through overheating.	Managers		

Level 2 Heatwave is Forecast - Alert and Readiness - 60% risk of heatwave in the next 2-3 days	Actioned by	Date actioned	Remarks
Communications and Emergency Preparedness Team to monitor long/close range weather forecasts issues by the Met Office.	Communications Team / Emergency Preparedness Team		
Communications team to use Trust wide e-mails to advise staff to be aware of the LTHT Heatwave Plan and other relevant guidance.	Communications Team		
Distribution of Department of Health advice to all LTHT managers and staff.	Communications Team		
Distribution of Department of Health advice to all patients and staff defined as at-risk.	Managers Ward staff		
Increase staff awareness. Make sure staff are aware of the NHS heatwave leaflet and poster: https://www.gov.uk/government/publications/heatwave-plan-for-england Distribute as required.	Managers Ward staff		
Identify any changes to patients care plans that may be necessary in the event of a heatwave.	Managers Ward staff		
Revise staff rotas to ensure staff have adequate time off and do not suffer heat exhaustion.	Managers Ward staff		
Look at capacity and the need for, and availability of, staff support in the event of a heatwave, especially if it lasts for more than a few days.	Managers		
Ensure staff are aware who to contact in Estates and Facilities should a problem occur on the wards.	All Managers		

Level 2 Heatwave is Forecast - Alert and Readiness - 60% risk of heatwave in the next 2-3 days	Actioned by	Date actioned	Remarks
Indoor thermometers should be installed in all appropriate areas. Use the attached temperature record chart (Appendix 2) to monitor temperate changes. Estates to be made aware if local refrigeration/air conditioning units are in need of repair.	Estates Ward staff		
Emergency Department and Facilities to be prepared as there may be large numbers of people seeking treatment if a heatwave occurs.	Urgent Care/Facilities		
Mortuaries to ensure they have their plans in place should body storage become an issue.	Mortuary managers		

Level 3 Heatwave Action - Temperature reached in one or more Met Office National Severe Weather Warning Service regions	Actioned by	Date actioned	Remarks
Continue with all action points at Level 2	All staff		
Use long/close range weather forecasts to assess local situation and establish LTHT Command and Control requirements in and out of hours as required. Assess, monitor and implement REAP levels	Emergency Preparedness Team / Corporate Operations		

Level 3 Heatwave Action - Temperature reached in one or more Met Office National Severe Weather Warning Service regions	Actioned by	Date actioned	Remarks
Continue to distribute advice to patients at risk, managers and staff. Ensure all CSUs are fully prepared.	Communications Team / Corporate Operations / Emergency Preparedness Team		
All wards and departments to ensure that staff have access to a copy of the Trust's heatwave plan and that staff are familiar with their roles and responsibilities.	Managers		
Identify and monitor the high risk patients. Move beds to cooler, more shaded areas on ward if possible.	Ward staff		
Closely monitor high risk patients recording their weight and fluid balance more regularly. Watch for any symptoms of exhaustion amongst patients and staff.	Ward staff Managers		
Consider the cancellations of non-urgent appointments, if this is not possible ensure waiting areas are adequately cooled and cool drinks are readily available.	CSU General Managers		
Ensure sufficient staffing levels and prepare cool areas. Make staff aware to drink more water during heatwave periods. Consider flexible working patterns for staff.	Managers		
Ensure there are sufficient supplies of cold water and ice (within infection control guidelines)	Facilities Ward staff		
Ward staff to be extra careful on the storage of foods and drugs on the wards, ensuring they are not left out any longer than necessary.	Ward staff		
At night, open windows to benefit from overnight lower temperatures which should help dissipate daytime heat build-up. (DO NOT REMOVE WINDOW RESTRAINTS)	All staff		
Estates and Facilities to monitor indoor temperatures four times a day. At times of alert, cooling plant will run on a continuous basis. All cooling plant equipment will be checked more frequently to identify any premature failure due to excess heat.	Estates and Facilities		
In the event of an emergency, report any breakdown of	Ward staff / Estates		

Level 3 Heatwave Action - Temperature reached in one or more Met Office National Severe Weather Warning Service regions	Actioned by	Date actioned	Remarks
refrigeration/air conditioning to the Estates Department immediately.			
Facilities to increase the number of waste disposal collections to prevent infection control issues.	Facilities		
<p>Estates to consider hiring portable air conditioning equipment if LTHT cannot cope with demand. See Estates heatwave plan for more specific guidance.</p> <p>The use of portable air conditioning units are subject to risk assessments. It should also be noted that portable air conditioning units are not always suitable solutions as there are two very different types of portable unit, both of which have inherent risks: one which uses a water reservoir (evaporation causes cooling) which in itself introduces issues around Pseudomonas and the second works on heat removal, water condensation and exhausting the heat to an external area - these units are not generally that efficient or effective and both types of unit tend to be very noisy. The deployment of temporary air conditioning is not always going to be the ideal solution and that very careful consideration will have to be given to each and every specific request.</p>	Estates		

Level 4 Major incident - Emergency response - Central Government will declare a Level 4 alert in the event of severe or prolonged heatwave affecting sectors other than health.	Actioned by	Date actioned	Remarks
Continue with all action points at Level 3	All Staff		
<i>At this point a major incident may be declared locally, regionally or nationally. All existing major incident policies and procedures will apply.</i>	In hours: Chief Executive/ Chief Nurse, Deputy		

LTHT will institute its Incident Response Plan. This will provide dedicated command and control structures to co-ordinate the staff and resources of the Trust and facilitate links to external organisations. During a red emergency it is possible NHS England (Yorkshire and the Humber) command arrangements will be invoked.	Chief Executive/ Head of Resilience Out of Hours: On call senior management team		
Estates and Facilities to continue to monitor indoor temperatures four times a day.	Estates and Facilities		
Maximise external shading and night time ventilation. Ensure staff are aware not to wedge open fire doors. Consider screening the windows and keeping them closed when the outside temperature is higher than inside the building. Where ever possible, turn off lights and unused equipment.	Ward staff Managers		
Increase and encourage the intake of cool drinks to both patients and staff. Ensure there are sufficient supplies of cold water and ice (within infection control guidelines) Avoid drinks containing caffeine and very sweet drinks. Provide assistance to patients that are unable to maintain an adequate fluid intake.	Ward staff Managers		
Adopt flexible working patterns for staff to minimise the midday heat exposure.	Managers		
Communications and Emergency Planning Team to continue to monitor long/close range weather forecasts issues by the met office and to distribute this information on the Trust intranet site. Information from the Department of Health and media broadcasts to be monitored for further advice and guidance.	Communications /Emergency Preparedness Team		

Appendix 2 - LTHT Temperature Record Chart

Day	Period				
Monday	1				
	2				
	3				
	4				
Tuesday	1				
	2				
	3				
	4				
Wednesday	1				
	2				
	3				
	4				
Thursday	1				
	2				
	3				
	4				
Friday	1				
	2				
	3				
	4				
Saturday	1				
	2				
	3				
	4				
Sunday	1				
	2				
	3				
	4				

This table has been designed to keep a record of room temperatures over seven days in the event of a heat wave and is to be used in conjunction with the Heatwave Plan.

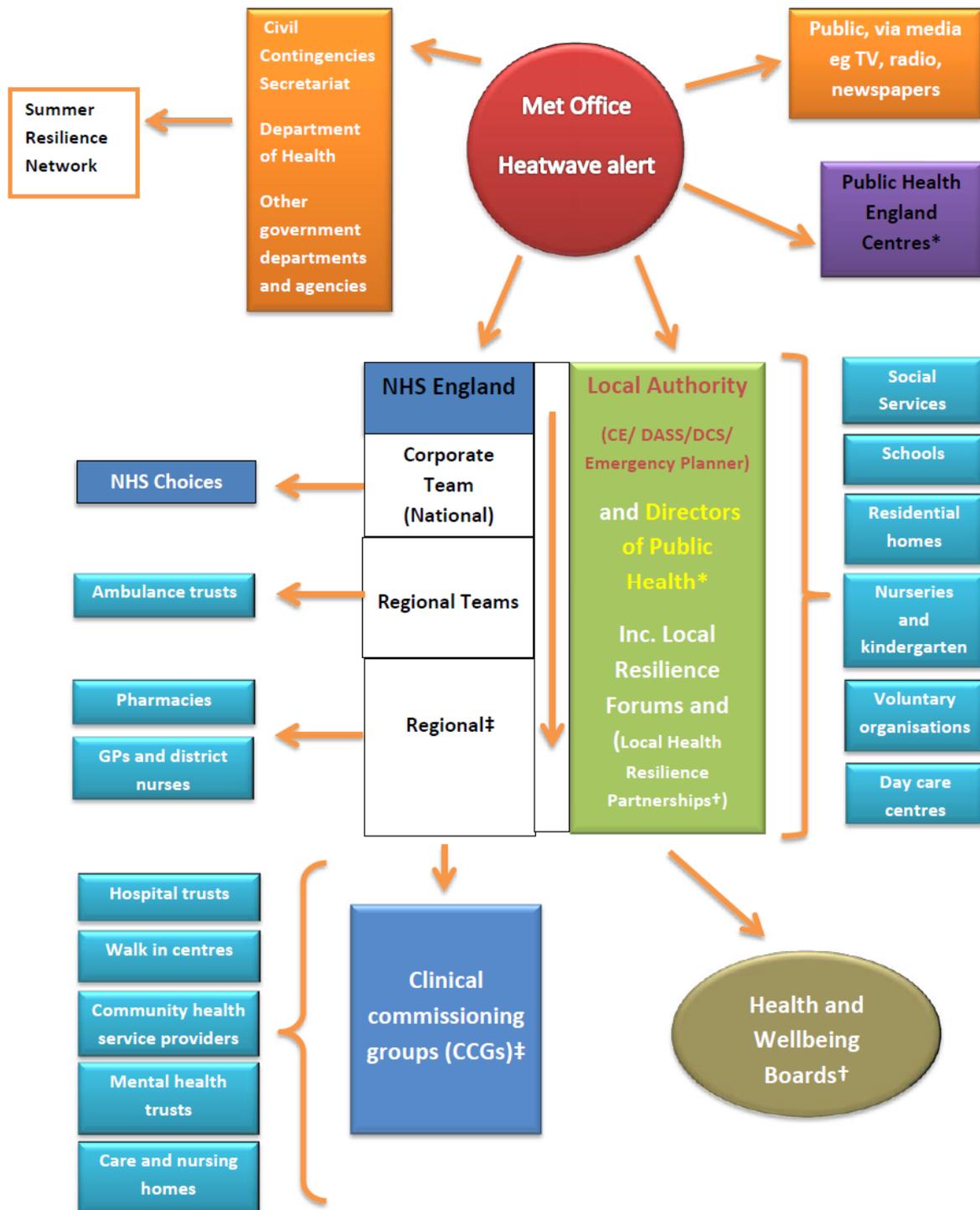
The left hand columns have been divided into four temperature measurements per day. These should be recorded at either the beginning of handover e.g. one during the night etc. or as determined by the person in charge in a department that does not operate 24 hours. Therefore there MUST be up to four recordings per day. The top row specifies room/area from within the department that would need to be monitored. A room/area should be documented within these columns

The temperature for each room should be recorded for each of the four periods in degrees Celsius (°C).

**IF A DEPARTMENT IS RECORDING A TEMPERATURE ABOVE 26 DEGREES CELSIUS
PLEASE REFER TO THE TRUST HEATWAVE PLAN.**

Appendix 3 - Example of Typical Cascade of Heatwave Alerts

Taken from 'Heatwave Plan for England - Protecting health and reducing harm from severe heat and heatwaves' May 2015



Notes

‡NHS England Regional and CCGs should work collaboratively to ensure that between them they have a cascade mechanism for heatwave alerts to all providers of NHS commissioned care both in business as usual hours and the out of hours period in their area.

*PHE Centres would be expected to liaise with Directors of Public Health to offer support, but formal alerting would be expected through usual local authority channels.

†LHRPs and HWBs are strategic and planning bodies, but may wish to be included in local alert cascades.

Appendix 4 - Example of a Heat-Health Watch Alert

Taken from 'Heatwave Plan for England - Protecting health and reducing harm from severe heat and heatwaves'.

Heatwave Warning

Tel: 0670 900 0100 www.metoffice.gov.uk



NHS (Ref: M043) Page 1 of 4

Forecast issued on Saturday, 18 August 2012 at 09:00

Heat-Health Watch

Level 2 - Alert & Readiness

<http://www.metoffice.gov.uk/public/weather/heat-health/#?tab=hotWeatherAlert>

The probability of heatwave conditions in part of England between 0900 on Sunday and 0800 on Wednesday is 50%

An update will be issued when the alert level changes in any region. Alerts are issued once a day by 0900 if required and are not subject to amendment in between standard issue times. Note that the details of the forecast weather are valid at the time of issue but may change over the period that an alert remains in force. These details will not be updated here unless the alert level also changes, the latest forecast details can be obtained at the following link:
<http://www.metoffice.gov.uk/public/weather/forecast/#?tab=map>

Regional Risk Assessments For Occurrence of Heatwave Conditions between 0900 Local Time on Sunday and 0800 Local Time on Wednesday.

The areas that are likely to be affected are:

Region	Risk	Comments
North East England	40 %	Cooler near coasts.
North West England	60 %	Cooler near coasts.
Yorkshire and the Humber	50 %	Cooler near coasts.
West Midlands	60 %	
East Midlands	60 %	Cooler near Lincolnshire coasts.
East of England	70 %	Cooler near coasts.
Southeast England	80 %	Cooler near coasts.
London	90 %	
Southwest England	60 %	Cooler near coasts.
Wales	60 %	Cooler near coasts.

General Comments:- High pressure over Scandinavia will allow very warm air to spread in from the continent. The warmest conditions will be across Southeast England, up into the Midlands and into eastern Wales. Maximum temperatures of between 32 and 33C are likely in these areas, with minima in the order of 20C in London and 18C in the Midlands. Sea breezes will moderate the temperatures near coasts, particularly in east as easterly flow increases.

Organisations providing health and social care should be aware of the advice and guidance set out in the Public Health England's Heatwave Plan, and the Heatwave Plan for Wales, as to the actions necessary before and during a Level 2 or Level 3 heatwave. Specific advice to be followed by health care professionals, and the managers and staff of residential and nursing homes in the event of a heatwave is available from Public Health England's website <https://www.gov.uk/government/publications/heatwave-plan-for-england-2013> and the Welsh Government website <http://wales.gov.uk>.

These alerts are sent to the CE of every provider of NHS commissioned care, Local Authority and Social Care Organisation in England, and to Health Board CEOs and Local Authority Directors of Social Services in Wales. If you would like to add a colleague to receive these alerts we would be grateful if you could set up an internal cascade within your organisation. If this is not possible, or you feel you are receiving this message in error please contact:
For England: summer_heatwave_alerts@dh.gov.uk
For Wales: Health.Protection@wales.gsi.gov.uk

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To aid local planning, listed below are the Local Resilience Forum (LRFs) matched against their regions.

NHS Region	NSWWS Region	Local Resilience Forum
North	North East England	Durham and Darlington Northumbria Cleveland
	Yorkshire and the Humber	Humber North Yorkshire West Yorkshire South Yorkshire
	North West England	Cumbria Greater Manchester Lancashire Merseyside
Midlands	West Midlands	Staffordshire Warwickshire West Mercia West Midlands
	East Midlands	Derbyshire Leicestershire Lincolnshire Northamptonshire Nottinghamshire
	East of England	Suffolk Cambridgeshire Essex Hertfordshire Norfolk Suffolk
South	South East England	Sussex Kent Surrey Thames Valley Hampshire and Isle of Wight
	South West England	Avon & Somerset Devon, Cornwall & Isle of Scilly Dorset Gloucestershire Wiltshire and Swindon
London	London	London
Wales	Wales	Dyfed Powys Gwent North Wales South Wales

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Appendix 5 - Block Assessment - Cool Room Availability IN LTHT

Site	Author	Last Updated
St. James's University Hospital Seacroft Hospital Chapel Allerton Hospital	Andrew Price, Head of Estates SJUH and the Peripheral Hospitals	05/06/2020
Leeds General Infirmary	Andrew Bielby, Head of Estates LGI	18/05/2019

The majority of wards are not generally supported by air conditioning and hence lack the benefit from cooling during a heatwave. Emergency Departments and wards classed as critical care/theatres are air conditioned and have the benefit this brings.

The following proactive measures should be utilised in areas without full air conditioning:

- Use window shading.
- Open windows for ventilation where possible.
- Leave windows open on warm nights.

In the event of a heatwave most wards will be reliant upon natural ventilation and have limited ability to cool down via air conditioning systems in periods of high external temperature. Gledhow (Elderly Wards) have been assessed as a higher risk due to their patient occupancy and their total reliance on natural ventilation.

SJUH	Assessment	Comment
Gledhow Wing	Natural ventilation to wards J2 to J21, some cooling on lower floors and Neonatal Unit (J1). Cooling to Maternity Theatres.	Elderly patients, more at risk during a heatwave. Use of mechanical ventilation limited by electrical capacity; however this will have IPC risks and a risk of overloading the electrical capacity.
Lincoln Wing	Lincoln A Block 1 New VRF Refrigeration systems supports Breast Imaging Scanner rooms on level GD, Renal PD and same day admissions on level 01. Lincoln Block 2 - Wards J41 and J45 have fan coil units to cool the areas, all other wards have some cooling to core areas. New Theatres 10 & 11 have full air conditioning. Lincoln C Block 5 - J53 cooled via air conditioning, cooling to Renal Transplant Ice Machine.	
Chancellor Wing	Cooling to OPD and ground floor, limited cooling to ward areas - Nurse Stations only (wards J24 to J29). Limited cooling to Breast Outpatients and J23 on level. Colposcopy has DX cooling in treatment rooms 1.	

SJUH	Assessment	Comment
Bexley Wing	Fully air conditioned (wards J80 to J98)	
Beckett Wing	Limited natural ventilation, some windows in ward J32 do not open, gets very hot (wards J30 and J31)	Use of mechanical ventilation limited by electrical capacity, however this will have IPC risks and a risk of overloading the electrical capacity. Investment in new windows will improve natural ventilation.

LGI	Assessment	Comment
Brotherton Wing	Some natural ventilation only (The Yorkshire Centre for Psychological Medicine)	
Martin Wing	Leeds chest clinic has mechanical ventilation; all other areas have natural ventilation.	
The 90s block	Natural ventilation only	Wards vacated - office space
The Gilbert Scott blocks	Mechanical Ventilation	Day Case Theatre & Recovery in service
Main site	Natural ventilation only (wards L26 to L28)	
Jubilee Wing	General wards in Jubilee have limited air conditioning (wards L1 to L25)	
Clarendon Wing	Limited air conditioning throughout (wards L30 to L52)	

Peripheral sites	Assessment
Chapel Allerton	Limited cooling to nucleus wards (wards C1 to C3) in central core, no cooling to old style wards (wards C4 to C6).
Seacroft	Renal services & physio have air conditioning, natural ventilation to other parts.
Wharfedale	Fully air conditioned (Ward 1 & Lymphoedema Unit)

Note:

If after all above measures have been applied in extreme cases wards staff, in conjunction with CSU, may consider moving patients away from south facing windows during midday periods. This should be included within local business continuity plans.

Appendix 6 - Severe Weather Group - Circulation List

By e-mail	Information /Action	Comment
Clinical Site Managers	Action	<ul style="list-style-type: none"> • Assess impact and risk. • Cascade Heat Health Watch Alert • Refer to Section 6 Roles and Responsibilities • Refer to Action Cards Appendix 1 and implement within area of responsibility
General Managers	Action	
Heads of Nursing	Action	
Wharfedale Hospital	Action	
Communications Team	Action	
Estates	Action	
Facilities	Action	
Informatics	Action	
Emergency Preparedness Team	Action	
Clinical Directors	Information	
Assistant Directors of Operations	Information	
Directors Group	Information	
Pathology	Information	
Corporate Planning	Information	

Circulation List:

leedsth-tr.Clinical-Site-Managers@nhs.net; leedsth-tr.General-Managers@nhs.net; leedsth-tr.Head-of-Nursing@nhs.net; communications.lth@nhs.net; andrew.bannister1@nhs.net; j.westmoreland@nhs.net; andrew.montgomery2@nhs.net; craigerichardson@nhs.net; andrew.bielby@nhs.net; jonathan.craven2@nhs.net; andrew.shepherd4@nhs.net; ian.thackray@nhs.net; amanda.gomersal@nhs.net; david-james.taylor@nhs.net; sharon.scott10@nhs.net; vicky.taylor15@nhs.net; ken.eggleton@nhs.net; bradleydickinson@nhs.net; alisonparkes@nhs.net; s.azeb@nhs.net; michael.harvey3@nhs.net; clare-louise.smith@nhs.net; joantowers@nhs.net; laura.turner10@nhs.net; karen.waterhouse@nhs.net; jacqueline.banks3@nhs.net; julie.capes@nhs.net; louisecartwright@nhs.net; linda.clapham@nhs.net; rdalton@nhs.net; sarah.dodsworth2@nhs.net; glenys.howden@nhs.net; barbara.martinez@nhs.net; shelagh.yates@nhs.net; jo.corrigan@nhs.net; helene.barnes@nhs.net; tracy.roberts4@nhs.net; leedsth-tr.Clinical-Directors@nhs.net; leedsth-tr.DirectorsGroup@nhs.net; julie.mcfarlane5@nhs.net

This circulation list was updated on 18/05/2017. Please note that this list is subject to change.