University Hospitals Coventry & Warwickshire NHS Trust

Clinical Guideline (full)

LOSS OF ESSENTIAL SERVICES IN RENAL SERVICES

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Clinical Operating Procedures relating to this guidance (please list)	N/A
Summary version available	☒

Guideline clinical content

Clinical Guidelines assist in decision-making; they do not replace clinical judgement. Regardless of the strength of evidence, it remains the responsibility of the clinician to interpret the application of the clinical guidance to local circumstances and the needs and wishes of the individual patient. Where variations of any kind do occur, it is important to document the variations and the reason for them in the patient's health record. If in doubt, seek senior advice.

Introduction

(Why this Trust-wide Clinical Guideline is necessary. Include reference to any relevant national guidelines, statutory requirements or other recommendations Identify the risk(s) the guideline will address.)

The purpose of this guideline sets out the appropriate responses to a sudden significant loss of service in all of the clinical areas within Renal Services. It is the responsibility of all members of the healthcare team to be aware and understand the content of this guideline, for example, managers discussing the content of the guideline at clinical handover/team meetings. It is important for staff to be aware of their role and responsibility during an emergency event. Managers will be required to plan to undertake simulations of an emergency, for example fire safety drill.

All NHS Trust's as set out in the Civil Contingencies Act 2004 (CCA) are required to maintain plans to ensure they can:

- Continue to provide critical/essential services during a crisis.
- Continue to perform their ordinary functions to a minimal acceptable level

The CCA places a statutory duty on University Hospitals Coventry & Warwickshire NHS Trust as a Category 1 Responder to have in place a strategic policy supported by a series of tactical plans that set out the actions, roles and responsibilities for preventing where possible or recovering from disruptive incidents that have the potential to seriously impede the Trust's ability to provide its critical services, for example, Renal Services.

Unexpected loss of significant amounts of haemodialysis capacity is uncommon but may occur for a variety of reasons such as fire, flood and structural or mechanical failure. There have been three examples of dialysis units failing this in the region in the past few years, for example, floods in Worcester, a water treatment plant failure in Heartlands Hospital and a structural problem in Solihull. These emergencies all led to closure of the units for a significant period of time. In each emergency event the failure was dealt with by the dialysis units and there were no adverse consequences reported. However similar situations may arise in future which will be beyond the ability of a single provider to manage without support from other dialysis centres.

This guideline is not prescriptive but gives an overview and actions to follow for likely emergencies that may occur, for example, significant unexpected loss of haemodialysis capacity for a sustained period which disrupts the haemodialysis unit's ability to provide safe haemodialysis for its patient population. It is not possible to provide a precise definition but it is likely to involve 10 or more machines for a period of more than 24 hours.

The guideline also highlights the roles and responsibilities that will be required by staff working in Renal Services in an emergency event.

Summary
This guidelines outlines details of the following: Classification of an emergency in Renal Services Role and Responsibilities of the Renal Executive Team Emergency Planning Principles Potential Problems Explanation of Contingency Plans for Loss of Services – including water, electricity, fire, contamination, major staffing shortages and loss of IT infrastructure Continuity of Checklists to maintain logs of each emergency – including salvage operations
Definitions
DEFINITION OF DISRUPTIONS Contingency Plans – triggers identified and actions to follow Continuity Check Lists – actions to follow at set time intervals to assess the impact of the emergency (refer to Appendices 1 – 6) **Emergency Events** – Include all possible types of emergencies from electrical failure and water loss. Operational breakdown is defined as a situation whereby normal operations are disrupted to such an extent and are anticipated to remain as such for a period of time that if no contingency was allowed for patient treatment would be significantly affected. Emergency Planning Principles – flow chart to identify the process to follow in the event of an emergency Haemodialysis – form of renal replacement therapy requiring access to the patient's blood and an extracorporeal circuit Peritoneal Dialysis (PD) – form of renal replacement therapy requiring via a peritoneal catheter
Guideline details (This is the main body of the guideline containing the detailed requirements, which will support implementation and decision-making. Use subheadings as required)

The roles and responsibilities of the Renal Executive Team

The members of the Renal Executive Team are as follows:

Clinical Lead
Group General Manager
Modern Matron for Renal Services
Renal Technical Manager

Their role and responsibilities are to ensure:

- Reporting and declaring disruptive Incidents to Chief Executive Team.
- UHCW NHS Trust policy and procedures regarding incidents are followed and carried out
- The safety of staff, patients and visitors are top priority
- Timely and suitable responses are made to every disruptive incident and/or threat to the well-being of staff, patients and visitors

- Service continuity requirements are quickly identified and implemented
- Sufficient resources are made available to manage the emergency event
- Accurate and timely communication with the Trust's stakeholders and other interested parties, for example, Trust Board, Commissioners, Renal Network. Local Commissioning Group
- Human, physical, financial and information assets of UHCW NHS Trust are protected
- That Renal Services can demonstrate that it has maintained responsibility and effective control of a disruption and that such management will enhance UHCW NHS Trust reputation
- The management of the crisis is reviewed after the event to ensure lessons for improvements are identified and implemented.

REPORTING AND DECLARING DISRUPTIVE INCIDENTS

Three levels of incident will provide the benchmark on which to judge the level of response required to manage an incident (Level 3 registering as the most serious, a major incident - see Table 1 – page 6) and return the operational activity within Renal Services back to a pre-determined level of normality.

Clinical Executive Team will identify either one of the following:
The detection of any disruptive incident or event during office hours which could impact on the normal operations of the Trust should be communicated to most senior managers on duty. In working hours: the contact will be a member of the Renal Executive Team (Clinical Lead, General Manager, Modern Matron, Renal Technical Manager).

Out of hours contact will be the Renal Consultant on call who will make decisions about further actions as appropriate). UHCW Trust guidelines will be followed for communications with the media via the Communications Department

Level 1 – Local Disruption
Defined as a local incident that is not an emergency and does not cause serious physical threat to people or property. Results are likely to be limited disruption to Renal Services and would pose no threat to the reputation of the Trust. The member of staff managing the incident should inform the Renal Executive Team who is to assess the severity of the incident and its possible consequences. If the incident is unlikely to escalate beyond Level 1 status, then control of the incident will be done locally.

Level 2 – Minor Disruption
Defined as incidents that could pose an actual threat to people and property, but not seriously affect the overall functioning of Renal Services. They may have legal ramifications or threaten the reputation of the Trust, and might include the isolation or evacuation of part of a building or buildings, with the assistance of the Emergency Services. Where the incident is deemed to be Level 2 by the Renal Executive Team then the Trust's Management Team will be informed of the incident immediately and of the decision to manage the incident locally.

Level 3 – Major Disruption
Defined as incidents causing a significant disruption to Renal Services/Trust's operations. It may affect an entire building or a number of buildings, staff, patients or visitors, with the escalation potential to require the intervention of the Emergency Services, who are likely to take operational control of the incident. Where the incident is deemed to be Level 3 by the Renal Executive Team/Chief Executive - all other. Directors and Heads of Department must be informed immediately. The decision to convene the Major Incident Command & Control Team to manage the Level 3 incident is designated to the Chief Executive and will depend on his/her assessment of the threat to the wellbeing of staff, patients or visitors; damage to property or disruption to operations

Table 1 - Types of Incident and Recommended "Level" Benchmarks -these are intended to indicate the likely management levels required.

Type of Incident	Level 1 (Local)	Level 2 (Minor)	Level 3 (Major)
Natural Emergencies causing building damage/collapse	Minor structural damage. No evacuation necessary	Minor structural damage. Evacuation and limited relocation necessary	Major structural damage. Evacuation and relocation necessary
Severe Weather conditions eg excessive rain, snow, wind, ice, extreme cold or heat	No building damage. Some staff absence. Minor disruption to normal services.	Minor building damage/serious disruption to normal services. Significant staff absence.	Serious building damage. Serious disruption to critical services. Significant staff absence. Relocation necessary
Fires	Minor damage to rooms, no relocation necessary. Little/no information loss. Room(s) out of use temporarily.	Medium damage, loss of some accommodation – can recognise to cover internally. Little loss of information.	Major damage to the infrastructure of the building and surrounding area. Significant information loss. Relocation necessary.
Flooding	Minor damage to rooms, no loss of equipment or documents. Little or no disruption	Medium damage to rooms and equipment. Some damage to documents. Remedial work and relocation necessary.	Major damage to rooms, equipment and information sources. Serious disruption to facilities.
Loss of stock – maintain at least 2 weeks of supply of stock – need to consider storage space and order stock accordingly Know who is responsible to order stock – able to liaise information	Main Unit may need to supplement satellite units (due to lack of storage space)	Stock is unavailable due to late delivery or non-ordering of stock – liaise with satellites/main unit/other wards/depts	National shortage of stock from suppliers – need to look at alternatives/contact procurement or supplies department
Civil Disorder, eg riots, strike action, public protests	Disruption to normal Trust Services. Some staff absence.	Serious disruption to normal services. Significant staff absence/inability to use facilities.	Prolonged serious disruption to normal services and significant number of staff unable to use facilities.
Water, Drainage or Electricity Supply failure - > 1 working day	Affecting <5% Renal Services property. Little or no disruption.	Affecting 5 -30% of Renal Services premises Minor disruption	Affecting >30% of the Trust premises Serious disruption.
Explosions	Small localised blast – Can be isolated.	Small/medium blast, minor damage. No release of toxic/flammable substances.	Medium/major blast. Major damage and disruption.

Table 1 - continued

Type of Incident	Level 1 (Local)	Level 2 (Minor)	Level 3 (Major)
Medical Epidemics	Disruption to normal services. Some staff absence.	Serious disruption to normal services. Significant staff absence.	For example, Legionella. Pandemic Flu outbreaks. Swine Flu
Computer system failure greater than one day	Affecting <5% of the Trust.	Affecting 5 -30% of Renal Services Minor disruption	Affecting >30% of the Trust Serious disruption.
Suspicious parcels/packaging. The most common size of a postal bomb is a size of a book, calendar or thick letter. Follow UHCW Trust Policy	Isolate and inform Renal Executive Team. Contact security Evacuation may be required.	Following serious threats by known activists. Isolate and evacuate. Involve security Involves Police Force	Operational activity performed by the Police Force supported by Renal Executive Team and security, eg, Bomb Threats

<u>The Affected Clinical Area</u> (Ward 50, PD, Day Case Unit, Haemodialysis Units, Transplant Clinics)

<u>Responsibilities</u>

The Coordinator of the shift takes the role of Senior Emergency Planning Officer (EMO) for the duration of the emergency (on-site at the time of the emergency).

The EMO wears a high visibility jacket to highlight the role of coordinating the emergency and people can see who to go to for advice. In the event of an evacuation of patients/carers and staff – a list of names must be maintained to ensure all persons are accounted for.

Senior Emergency Planning Officer will be responsible for:-

- managing the response to an emergency
- making a full assessment of the emergency event
- reporting the incident to the Renal Executive team – may have to nominate a Deputy Emergency Planning Officer to assist in this process

Their role will include:-

- Identify how quickly the affected clinical area can return to operational activity
- Follow Contingency Plans as outlined in this guideline

First aiders will be medical and nursing staff on duty at the time of the emergency event

For Haemodialysis Units – need to consider:-

- Prioritising and rescheduling dialysis sessions as appropriate to the emergency event under the guidance of members of the renal medical team. However, in all emergency events when haemodialysis has to be discontinued or delayed – those patients affected will be assessed for their individual dialysis needs and an assessment of their residual function. Patients will be classified as high or low risk according to their level of dialysis need. This may result in safely reducing the hours of dialysis, for example, shortening dialysis hours, twice a week dialysis. Decisions will be based on individual patient requirements.

In all cases of an emergency situation at Whitnash Satellite Unit – a 999 emergency call is made

A risk assessment will need to be completed to define if a patient is either a:

High Risk patient – those patients in need of dialysis x 3 week - cannot miss a dialysis due to potassium levels and/or fluid status

Low Risk patient - those patients who can miss a dialysis treatment for up to 24 hours

- If patients are unable to receive dialysis on a twilight shift due to an emergency event – they are assessed on an individual basis and dialysis is planned accordingly.

- Inform patients that are affected by the emergency event and offer reassurance, informing them that plans are in place to provide their treatment. Patients will need to understand they will need to be flexible in the provision of their haemodialysis.

- For example, if the emergency event is less than 24 hours – twilight shifts at the non-affected units will be accessed and nursing staff from the affected unit will travel to the satellite unit/main unit providing treatment for the cohort of patients needing haemodialysis if that unit can offer some capacity for dialysis.

- Alternative dialysis facilities at a non-affected unit may need to be considered, for example, opening night shifts, opening on a Sunday shift, accessing all twilight shifts.

All staff to be involved in managing the emergency event and they must remain on duty throughout the emergency event even though this may mean extending their working shift until Renal Executive Team declare situation under control.

- Full hours of dialysis will be given if the emergency event is resolved in the short term – this includes those patients on a twilight shift.

- Organise patient transport by contacting Transport Liaison Officer – contact details in Appendices

- Organise transport of dialysis equipment and/or divert deliveries

- Inform the Renal Network (depending on level of emergency – Renal Executive Team to do this)

- Try to identify alternative external dialysis capacity locally, including, non- NHS providers

- Consider ability to continue to provide acute services in the main unit, may mean patients are transferred to ITU.

-Double Filtration Plasmapheresis – patient to receive treatment on allocated ward.

-Plasma Exchange – Delivered on the ward where the patient is.

- Telephone Numbers **– details of contact numbers for key members of staff – refer to Appendix 5**

-Staff will understand how to carry out an evacuation- this includes how to evacuate the area/building and go to the assembly points for all persons, including visitors. A progressive horizontal evacuation will be carried out (away from imminent danger to a safe place on the same level beyond at least one set of fire doors)

After the Emergency

- Renal Executive Team and Senior Emergency Planner will lead the Recovery of Service Team meeting post the emergency event. A Root Cause Analysis will be completed and will explore what happened in the emergency event and the main contributory factors. Additionally, the actions/interventions and the overall effect to treat those patients affected by the emergency event will be outlined

Staff will be debriefed on return to normal operating conditions. A Recovery of Service Team meeting will be held as soon as possible after the emergency event and how the emergency was dealt with as part of continuous improvement and prevention.

Supplementary Information – may be required by Emergency Personnel or Emergency Services – this will be given by either the Emergency Planning Officer or a member of the Executive Team.

Non – affected Units, for example Satellite Unit

- Assistance as required – this includes access to spare capacity and staff

- **Ambulance Services**

- Be receptive to urgent transportation needs

- Provide transport as appropriate

- Liaise with other transport providers as required

- **Patients**

- Explain to patients the importance of being flexible about changing dialysis times and locations

- Try to reduce dialysis requirements and prevent emergencies by following dietary advice

- Inform Chairman of Patient Forum

- **The Renal Network**

- Keep members of the network informed

- Help coordinate responses

- Identify spare capacity in the region and facilitate collaboration between units if necessary
- After the incident a meeting to learn from the experience should be convened by the Renal Network.

- Record and disseminate lessons learnt as a result of the incident

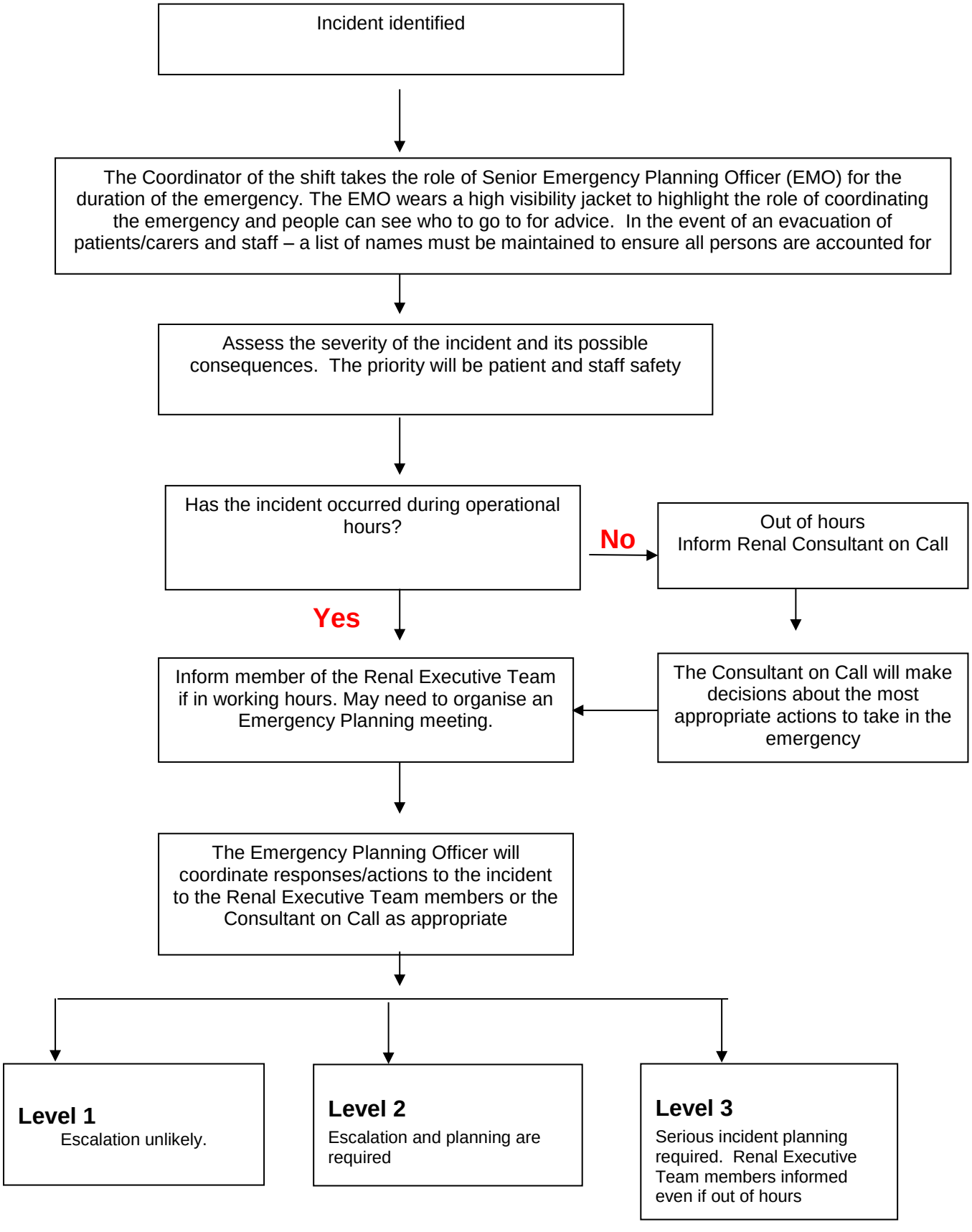
- **Commissioners**

- Contribute to action planning

- Facilitate financial arrangements

- Contribute to post incident learning meeting

Emergency Planning Principles



Potential Problems

- **Transport of patients and staff.**

Ambulance services will need to be responsive to the sudden change in requirements. It may be necessary to look at alternative transport including car sharing, use of friends or relatives or in some cases such as flooding, fire using additional emergency services.

- **Funding Issues**

It is likely that units providing assistance in an emergency will incur expenses that will not be covered by existing funding arrangements. This includes use of consumables, staff overtime, pathology costs, etc. This should be cleared with a member of the Renal Executive team prior to authorisation of significant expenditure, for example, opening up a shift in a private dialysis unit. Records of expenditure should be kept and mechanisms for reimbursement worked out later according to local expenses.

- **Documentation**

Where possible patient records, prescriptions, observation charts and other documentation should travel with the patient. This will help to ensure preservation of a complete medical record on their return to the home unit. Arrangements may need to be made for data entry onto the correct computer systems at a later time.

- **Acute Kidney Injury (AKI)**

Many haemodialysis providers also provide services for AKI. Loss of chronic capacity haemodialysis capacity may impair a unit's ability to provide AKI care either through loss of acute stations, diverting staff and machinery to other areas or through acute station being used for chronic patients.

Units may feel they need to stop accepting external referrals with AKI or even export local patients with AKI to other hospitals. Transporting seriously ill patients carries considerable risk of adverse events and should be avoided if at all possible. It also causes considerable inconvenience for patients and relatives and those who do not recover function finish up on the wrong chronic dialysis programme. Closing to acute referrals should only be considered as a last resort. If necessary it should be agreed with the other units in the region and commissioners informed via the Renal Network.

- **Coordination and communications**

The problems caused by unexpected loss of dialysis capacity are complex and unpredictable. Many organisations may be involved and it is important at the outset to establish a robust communications plan. Key individuals will be the Renal Executive team (Clinical Lead, General Manager, Modern Matron and Renal Technical Manager) and staff from the affected unit, the network clinical lead and manager and a commissioner. They should be identified at the start of the emergency and should liaise with representatives in other organisations as required. UHCW Trust Communication Department will be informed and involved in the emergency processes.

- **Transplantation**

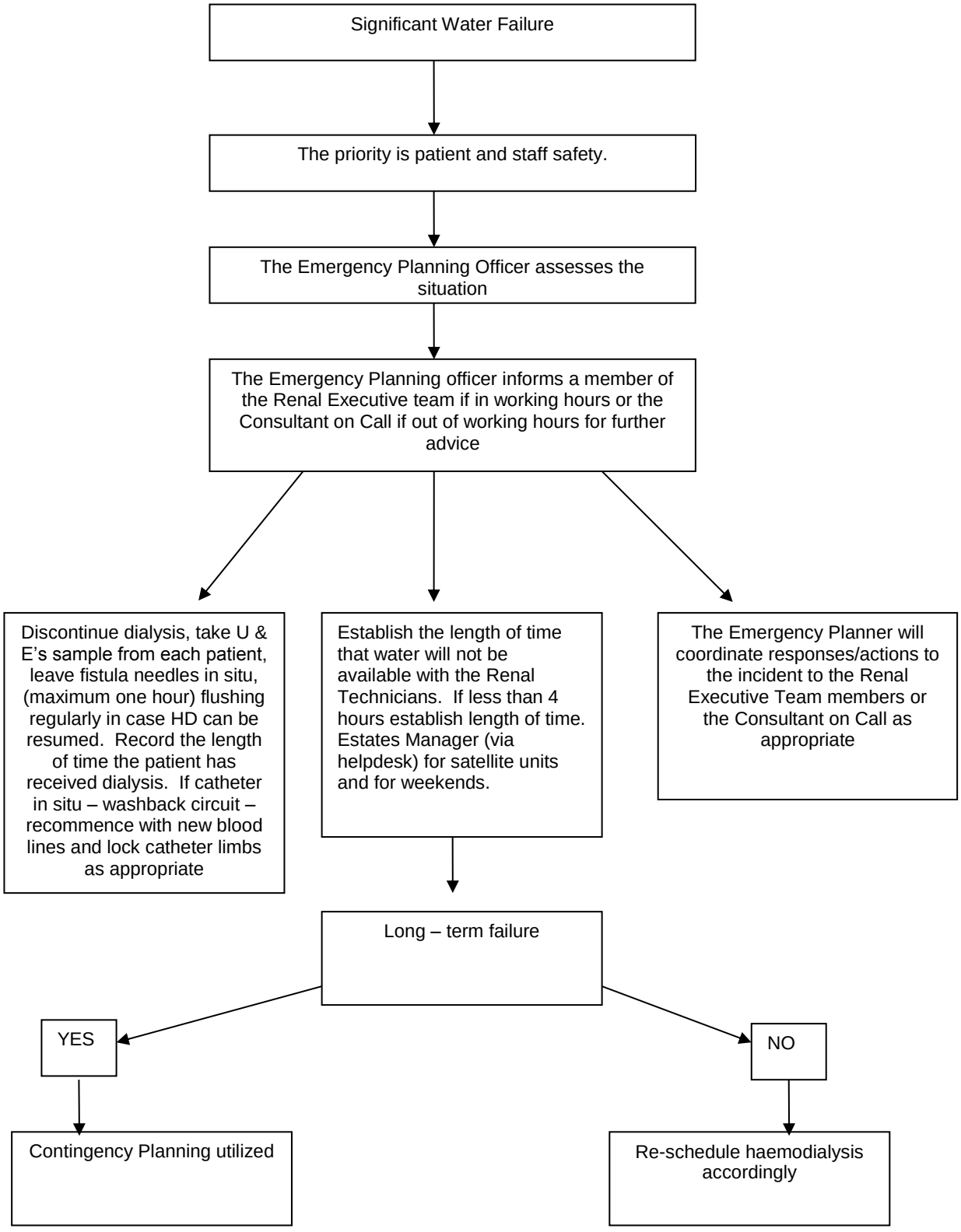
Incident may have an impact on Transplant activity – virtual clinics (via telephone may need to take place). If patients need blood then an agreed location will be identified where patients can collect blood forms for screening.

Contingency Plans for Loss of Services

Trigger	Effect on Renal Services	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Water** **Contacts:** **Renal Technicians** **Helpdesk** **Estates Manager**	**Ward 50** • Hand washing with soap and water will not be possible • Toilet flushing will be affected • Dekomed equipment will be affected • Patient refreshments will be affected • Washing facilities will be unavailable • Heating may be affected **Peritoneal Dialysis (PD) /Day Case Unit** • Hand washing with soap and water will not be possible • Toilet flushing will be affected • Patient refreshments will be affected • Washing facilities will be unavailable • Heating may be affected **Haemodialysis** • Haemodialysis machines will not function • Hand washing with soap and water will not be possible • Toilet flushing will be affected • Dekomed equipment will be affected • Patient refreshments will be affected • Washing facilities will be unavailable • Heating may be affected	High risk	**Ward 50 and PD/Day Unit** **-** See action plan for short/long term water failure - Do not use sluice or flush toilets - Use hand gel and/or gloves when hand washing required - Provide alcohol hand rubs for hand disinfection - Use bedpans and bottles, tip liquid waste into sluice (although not working) - Use of air fresheners - Arrange for patients/staff to have bottled drinking water from ISS - In the event of long-term water failure, plan to transfer patients to an alternative ward where water is available - Ensure all patients are kept fully informed of the situation and how this may affect their treatment **Haemodialysis** - As above plus - Delay or safely reduce haemodialysis therapy based on individual patient needs - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Access emergency dialysis slots at another HD centre, for example, satellite unit, may need to consider opening units on a Sunday - Ensure all patients are kept fully informed of the situation and how this may affect their treatment - All staff to remain on duty until Renal Executive Team declare situation under control - Refer to Appendix 1 – 3 as appropriate

WATER SUPPLY FAILURE

In the event of water supply failure the following pathway should be followed

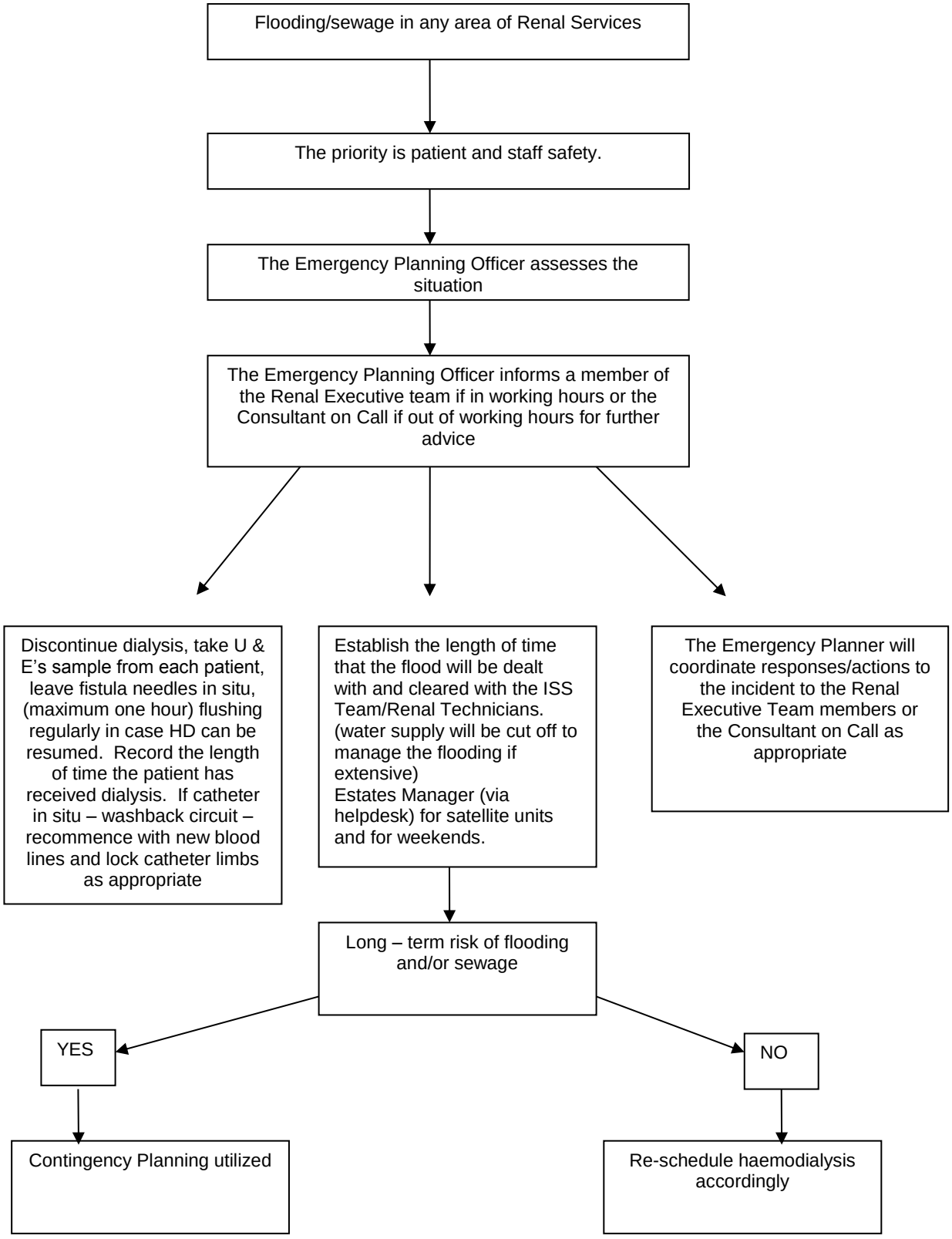


Trigger	Effect on Renal Services	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Sewage** **Contact:- VINCI/ISS**	**Ward 50** • Delay in patients admission • Toilets and sluice unusable • Waste products will not be able to be discarded • Risk of contamination to equipment • Risk of infection to patients **Peritoneal Dialysis(PD) /Day Case Unit** • Delay in patients admission • Toilets and sluice unusable • Waste products will not be able to be discarded • Risk of contamination of equipment • Risk of infection to patients **Haemodialysis** • Unable to perform haemodialysis • Delay in patients admission • Toilets and sluice unusable • Waste products will not be able to be discarded • Risk of contamination of equipment • Risk of infection to patients	High risk	**Ward 50** - Inform Renal Executive Team of sewage failure and the consequences - Do not use sluice or flush toilets - Use bedpans and bottles, tip liquid waste into sluice (although not working) - Ensure all patients are kept fully informed of the situation and how this may affect their treatment - in-patients may need to transferred to another ward **Peritoneal Dialysis(PD) /Day Unit** - as above plus - PD waste to be kept in sluice in clamped drainage waste bags - In-patients in the PD Day Unit may need to transfer to another ward **Haemodialysis** - As above plus - may need to isolate area/evacuate bay/s used for HD treatments - Delay or safely reduce haemodialysis therapy based on individual patient needs - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Access emergency dialysis slots at another HD centre, for example, satellite unit, may need to consider opening units on a Sunday - Ensure all patients are kept fully informed of the situation and how this may affect their treatment. Patient information Leaflet given to patient on the day of event (if long term) -All staff to remain on duty until Renal Executive Team declare situation under control - Liaise with ISS for contingency clean up plan

Trigger	Effect on Renal Services	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Flooding** **Contact:- VINCI/ISS**	**Ward 50** • Delay in patients admission • Risk of contamination to equipment • Risk of infection to patients • Risk of injury (falls) to patients and staff • Damage to equipment **Peritoneal Dialysis(PD) /Day Case Unit** • Delay in patients admission • Risk of contamination of equipment • Risk of infection to patients • Risk of injury (falls) to patients and staff • Damage to equipment **Haemodialysis** • Unable to perform haemodialysis • Delay in patients admission • Risk of contamination of equipment • Risk of infection to patients • Risk of injury (falls) to patients and staff • Damage to equipment	High risk	**Ward 50** - Inform Renal Executive Team of flood/flooding and the consequences - Liaise with Estates (VINCI)/ISS for advice - Ensure all patients are kept fully informed of the situation and how this may affect their treatment - in-patients may need to transferred to another ward **Peritoneal Dialysis(PD) /Day Case Unit** - as above plus - In-patients in the PD Day Unit may need to transfer to another ward **Haemodialysis** - As above plus - may need to isolate area/evacuate bay/s used for HD treatments - Delay or safely reduce haemodialysis therapy based on individual patient needs - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Access emergency dialysis slots at another HD centre, for example, satellite unit, may need to consider opening units on a Sunday - Ensure all patients are kept fully informed of the situation and how this may affect their treatment. Patient information Leaflet given to patient on the day of event (if long term) - All staff to remain on duty until Renal Executive Team declare situation under control - Liaise with ISS for contingency clean up plan

FLOODING / SEWAGE

In the event of flooding the following pathway should be followed

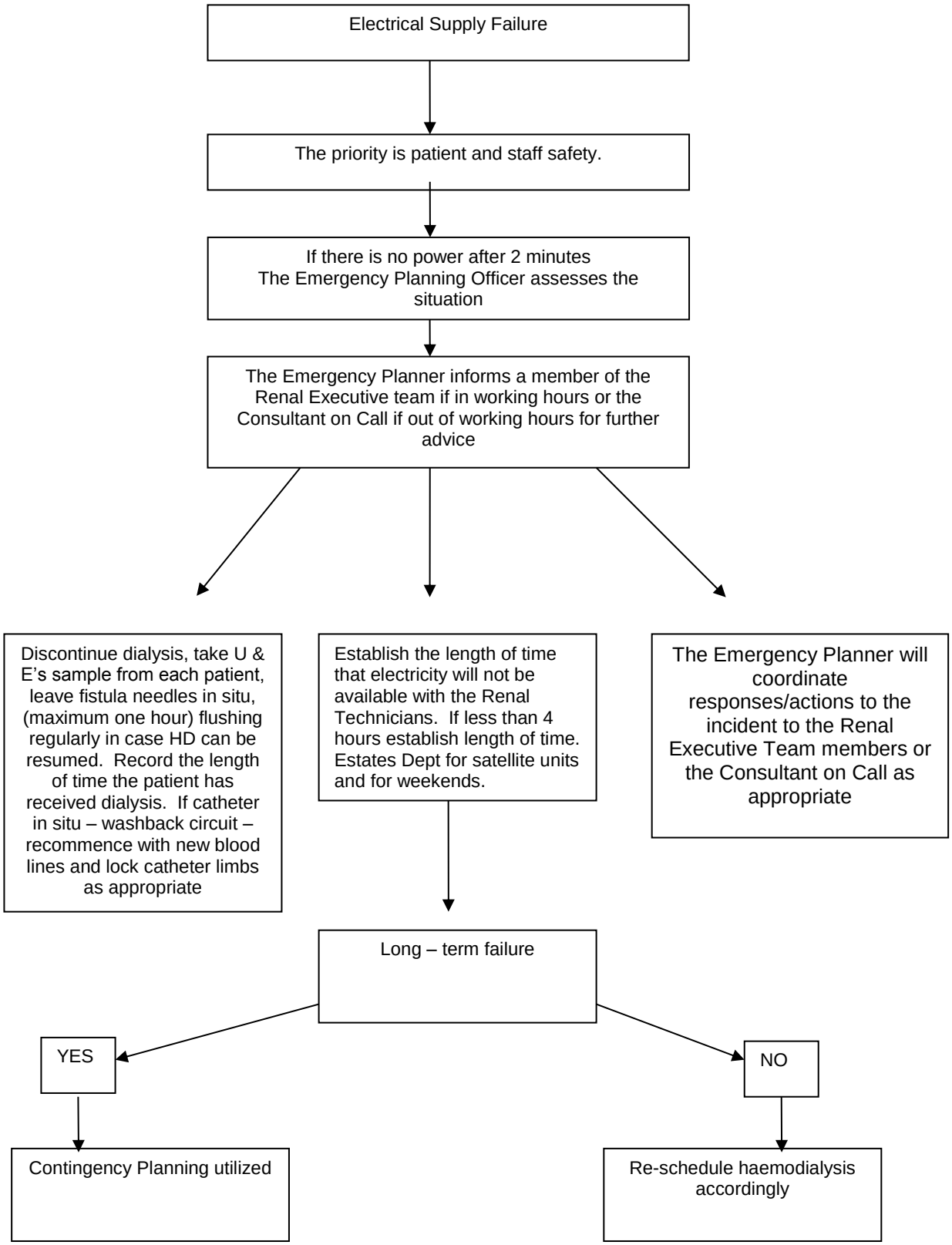


Trigger	Effect on Renal Services	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Electricity**	**Ward 50** **Until hospital generator kicks in:** • Lighting failure throughout area • Possible falls, slips, trips and general injuries to staff/patients/public due to poor lighting • Cessation of all electronic equipment • Possible injury to staff and patients due to attempts to provide care with inadequate lighting (during hours of darkness) **If hospital generator also fails:** • Cessation of all electronic equipment • As above **Peritoneal Dialysis(PD) /Day Case Unit** • As above	**High risk**	**Ward 50 and PD/Day Unit** - See action plan for short/long term electrical failure - Equipment, for example, Dash 3000 has a 4 hour battery operated back up system. - Inform Renal Executive Team of power failure and the consequences - In the event of long term electrical failure, remove patients/staff/public to an alternative environment where electricity is available - Ensure all patients are kept fully informed of the situation and how this may affect their treatment - As above plus - A patient undertaking APD will need to transfer to CAPD during this event

Trigger	Effect on Renal Services	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Electricity (Continued)**	**Haemodialysis** • Alarm activated on all haemodialysis machines • Lighting failure throughout unit • Possible falls, slips, trips and general injuries to staff/patients/public due to poor lighting • Possible injury to staff and patients due to attempts to provide care with inadequate lighting (during hours of darkness) **If hospital generator also fails:** • Cessation of all electronic equipment • Alarm state on all haemodialysis machines • Lighting failure throughout unit • Possible falls, slips, trips and general injuries to staff/patients/public due to poor lighting • Possible injury to staff and patients due to attempts to provide care with inadequate lighting (during hours of darkness) • All haemodialysis patients will have dialysis ceased • Patients on haemodialysis will be sent home or back to the wards with incomplete dialysis prescription • Patients due for haemodialysis will not receive treatment • Alternative arrangements will need to be made with another dialysis centre to take over patients therapy if failure long term	**High risk**	**Haemodialysis** **-** Nursing staff to follow procedure – hand crank for as long as it takes to immediately discontinue HD , after 2 minutes if supply not restored – start to return the patients blood by wash back by gravity - New blood lines and dialyser must be used if dialysis is to be recommenced once main power is returned - Nursing staff to obtain bloods for U&E's to assess the patients biochemistry status - Record the length of time the patient had dialysed for and the amount of fluid removed during this time in the patients nursing kardex - Ensure all patients are kept fully informed of the situation and how this may affect their treatment - Enlist assistance from clerical/ancillary staff to facilitate patient movements if needed - Remove all used blood lines and consumables from the HD machine and switch off machine and clean machine as procedure - Place a label on the machine to inform staff that the machine has not completed the disinfection process - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Access emergency dialysis slots at another HD centre, for example, satellite unit, may need to consider opening units on a Sunday - Patients may have reduced haemodialysis therapy based on individual patient needs - Once electricity is restored – ensure all HD are disinfected - All staff to remain on duty until Renal Executive Team declare situation under control

ELECTRICAL SUPPLY FAILURE

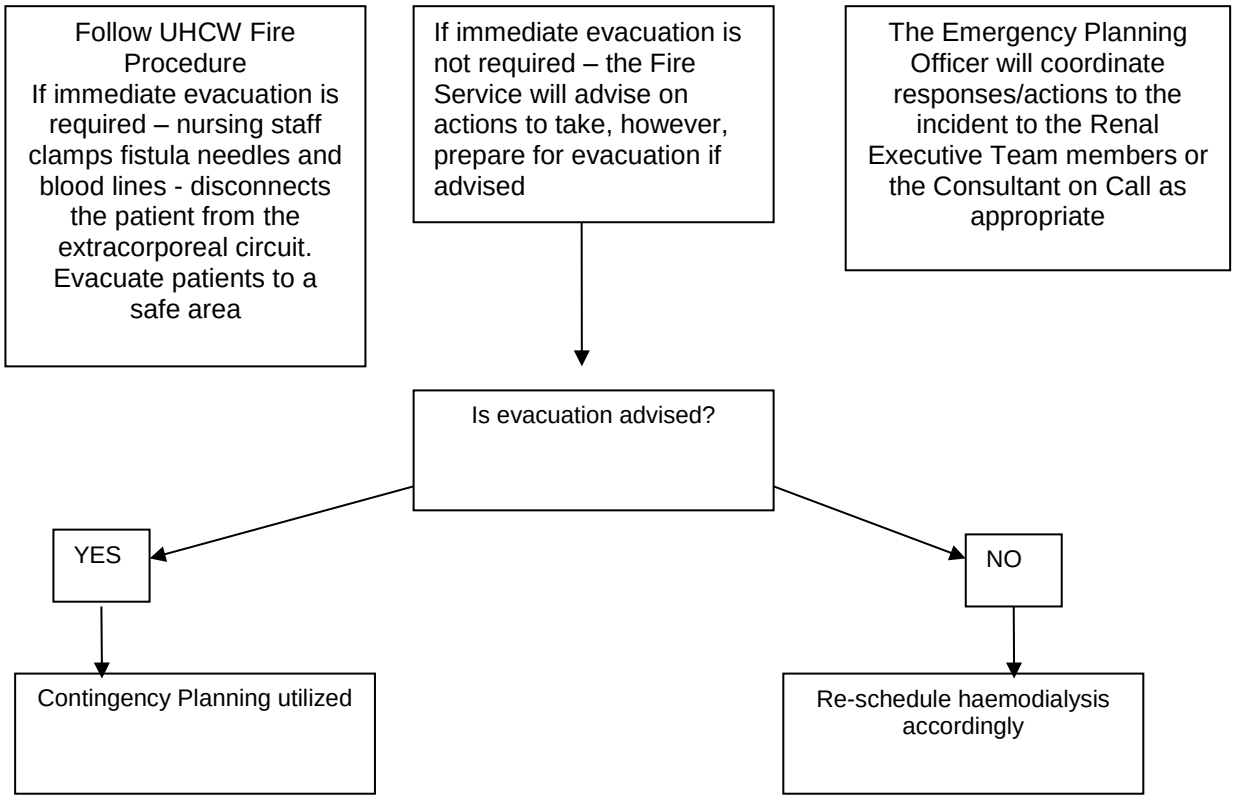
In the event of electrical supply failure the following pathway should be followed:



Trigger	Effect in Ward/HD/PD/Day Case Unit	Risk Rating (H,M,L)	Contingency Plan
Destruction of Property as follows: **Fire** **Storm Damage** **Terrorist Activity**	Clinical area unable to function safely – this emergency could affect all areas within Renal Services: Ward 50 PD Day Case Unit Haemodialysis Transplant Clinics Worst case scenario – complete destruction of unit, death of persons in unit at time of incident Best case scenario – partial destruction of unit, damage to equipment **Although a bomb may seem unlikely, there is always a slight possibility of a hoax. In all cases, take no chances** **If you answer the telephone and it is a bomb warning:** **- be calm** **- listen carefully** **- react quickly and** **- report exactly to the most senior nurse on duty who will escalate to the Renal Executive Team** **- Contact security**	High risk	**All areas** - Plan to evacuate area/unit - Nursing staff to follow UHCW Fire Procedure at all times, i.e raise the fire alarm, emergency call out 2222 to report the emergency - Emergency Planning Officer to wear high visible vest as per procedure - Liaise with UHCW Fire Response Team - All clinical areas within renal services are alerted to the possible evacuation of patients and staff – making their way to the nearest fire exit and assembly point (following a progressive horizontal evacuation) - Ensure all patients are kept fully informed of the situation and how this may affect their treatment **Haemodialysis – as above plus** - Will need to discontinue haemodialysis immediately – follow procedure • blood pump is stopped • blood lines and needles are clamped to disconnect extracorporeal circuit. • **DO NOT WASH BACK** • Ask the patient to take their nursing kardex with them. Evacuate patients to a point of safety via an appropriate route -All staff to remain on duty until Renal Executive Team declare situation under control - Access emergency dialysis slots at another haemodialysis centre. - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Request home haemodialysis patients permission to utilise their home facilities to provide dialysis with a nurse in attendance - Request assistance from dialysis companies/other dialysis units to replace damaged equipment/consumables - All staff to remain on duty until Renal Executive Team declare situation under control

Fire in the Clinical Area of Renal Services

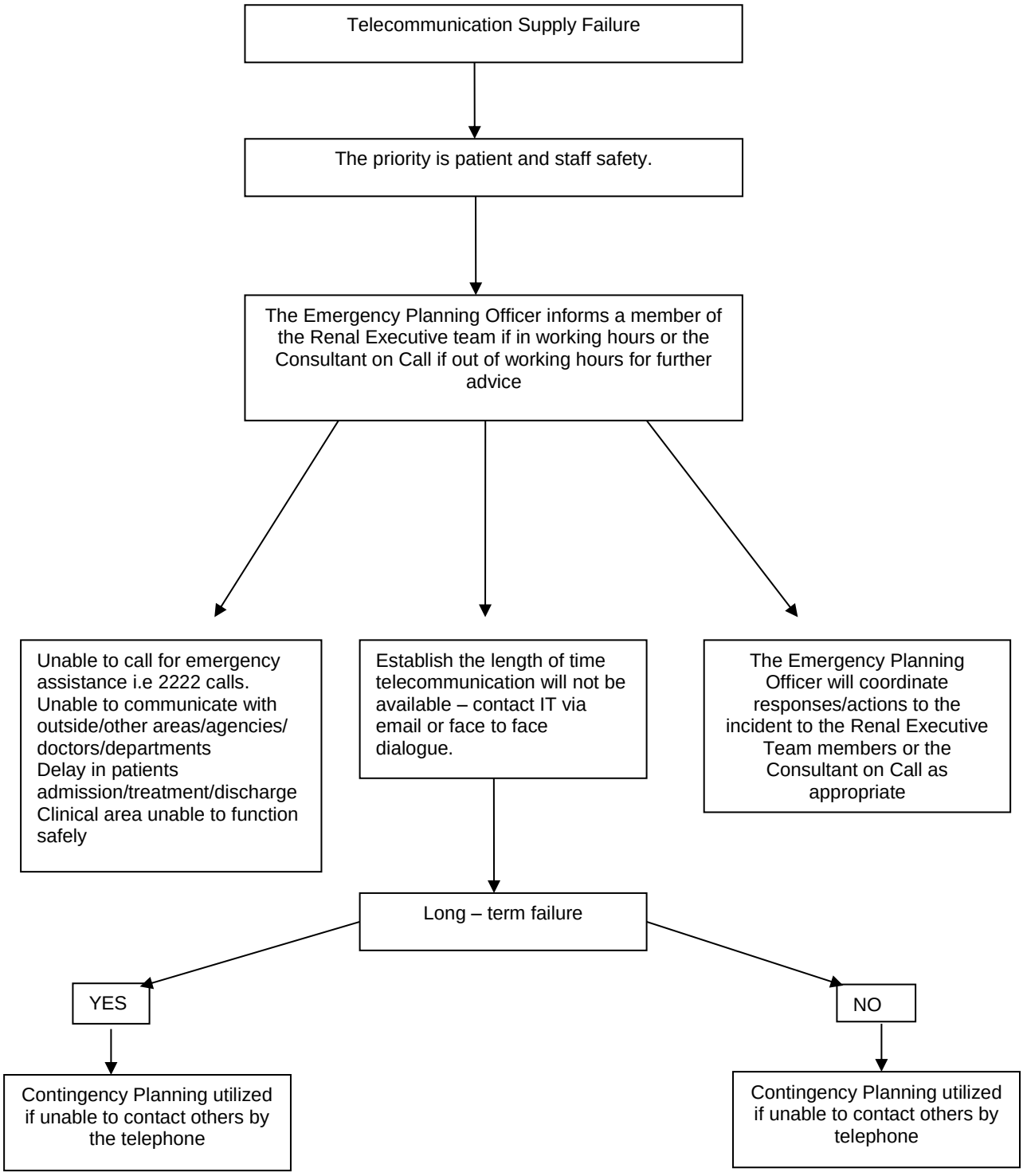
In the event of Fire the following pathway should be followed:



Trigger	Effect in Ward/HD/PD/ Day Case Unit	Risk Rating (H,M,L)	Contingency Plan
Major Utility Failure **Telecommunications**	• Unable to call for emergency assistance, ie 2222 calls • Unable to communicate with outside agencies/doctors/department • Unable to contact relatives/patients • Delay in patients admission/treatment/discharge Clinical area unable to function safely – this emergency could affect all areas within Renal Services: Ward 50 PD Day Case Unit Haemodialysis Transplant Clinics	High risk	**All areas** - Inform Renal Executive Team of telecommunications failure and the consequences - All clerical and administration staff to remain on duty to act as messengers until Renal Executive Team declare situation under control - Messenger to be sent to porters, who will subsequently be stationed along the main hospital street - In emergencies(fire, cardiac arrest) send a runner to porter in corridor who will radio messages to correct department - Staff individual mobile phones to be utilised where necessary - Clerical staff to keep lists of tasks to be completed once communication systems back on line - All staff to remain on duty until Renal Executive Team declare situation under control

TELECOMMUNICATION SUPPLY FAILURE

In the event of Telecommunication supply failure the following pathway should be followed:



Trigger	Effect on Renal Services Ward/HD/PD/Day Unit	Risk Rating (H,M,L)	Contingency Plan
Major Staff Shortage For example, epidemic within clinical area or loss of staff due to sickness, for example, norovirus	Clinical area unable to function safely – this emergency could affect all areas within Renal Services: Ward 50 PD Day Case Unit Haemodialysis Transplant Clinics	High risk	**All areas** - Inform Renal Executive Team of incident - Call in all remaining available staff - Book bank/agency staff - Follow UHCW 'Outbreak Policy' - Liaise with Infection Prevention and Control Team for advice -Contain the epidemic by using isolation practices -Assess clinical needs of patients within Ward 50 and Day Case Unit and cancel all TCI's – may need to transfer patients to another ward area within UHCW -Re-schedule transplant clinic times for patients -Ensure all patients are kept fully informed of the situation and how this may affect their treatment - - All staff to remain on duty until Renal Executive Team declare situation under control **Haemodialysis – all above plus** - Available renal nursing staff to work within HD to expand staff numbers - Prioritise and re-schedule dialysis sessions - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Access emergency dialysis slots at another HD centre, utilising their staff to perform therapy on patients UHCW/satellite units cannot accommodate

Trigger	Effect in Ward/HD/PD/Day Unit	Risk Rating (H,M,L)	Contingency Plan
Terrorist Incident **Contamination:** **- Radiation** **- Chemical Spillage** **- Biological** **- Major leak** **Contact UHCW Health & Safety Team/VINCI**	Clinical area unable to function safely whilst contamination persists– this emergency could affect all areas within Renal Services: Ward 50 PD Day Case Unit Haemodialysis Transplant Clinics	High risk	**All areas** - Evacuate area/unit - Inform Renal Executive Team of incident - Liaise with UHCW Health & Safety Team and VINCI for advice. - Call in all available staff, cancel all annual leave - Identify contaminant and liaise with authorities re: clean up using Personal Protective Equipment (if appropriate spillage – will need guidance from Renal Technicians) - Contain the affected area - Ensure all patients are kept fully informed of the situation and how this may affect their treatment **Haemodialysis – all above plus** - Delay haemodialysis therapy for 24/48 hours depending on individual patient condition - Access emergency dialysis slots at another HD centre, may need to utilise their staff to perform therapy - Give patients dietary and fluid control advice to keep biochemistry and fluid status as controlled as possible - Locate a suitable area in a hospital environment to set up a temporary dialysis facility for HD, using reverse osmosis machines to produce water requirements - Request home haemodialysis patients permission to utilise their home facilities to provide dialysis with a nurse in attendance - Request assistance from other dialysis units to replace contaminated equipment/consumables - All staff to remain on duty until Renal Executive Team declare situation under control

Trigger	Effect in Ward/HD/PD/Day Unit	Risk Rating (H,M,L)	Contingency Plan
Loss of IT Infrastructure • **Proton**	Clinical and Clerical areas unable to function safely - • Delays in patient Treatments • Loss of Income This emergency could affect all areas within Renal Services: Haemodialysis Units Peritoneal Dialysis Team Transplant Team Ward 50 Admin and Clerical Staff	High Risk	• Refer to CRRS or Patient view for Patient Blood results • Refer to CRRS for patient historical Clinic Letters • Clinic Letters to be typed via Winscribe • Refer to patient Transplant workup folder or NHSBT for transplant listing status • Staff to refer to printed Proton Prescriptions and / or Patient Cardex for current Prescription, previous patients weight and Dialysis Session data • All units to record Dialysis Treatment sessions manually on running sheets to be entered onto Proton retrospectively when available.
• **Nexadia**	This emergency would affect the Haemodialysis Units • Delays in patient Treatments • Loss of Income	Low Risk	• Where Nexadia is in use Dialysis Treatment sessions will continue to be captured electronically. Session data will be exported to Proton when available. • Staff to refer to Proton Prescriptions and / or Patient Cardex for current Prescription, previous patients weight and Dialysis Session data • All units to record Dialysis Treatment sessions manually on running sheets and entered onto Proton retrospectively when available.
• **Trustwide**	• Loss of IT • Loss of CRRS • Complete loss of IT failure in Renal Services		As above Keep paper records to log patient results from laboratory (if possible)

Renal Service Continuity Check Lists

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 1
PREMISES CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

First 3 hours	**Time**	**Signature**
Commence and maintain log of key actions/decisions		
Review damage to premises, decide which clinical areas are still usable and which are not.		
Liaise with Estates Manager Determine whether additional clinical areas are required or whether staff/patients from affected areas/offices can be transferred elsewhere on site, for example transplant clinic		
Next 12 hours	**Time**	**Signature**
If alternative clinical areas are to be used review the requirements for furniture and equipment. **See Section 3**		
Arrange for transport		
Secure the damaged site		
Next 24 hours	**Time**	**Signature**
After consultation with Estates Manager, arrange alternative temporary accommodation as necessary		
If portable accommodation is required, ensure designated site is clear and has any necessary service connections		
Arrange furniture, equipment and supplies as required		

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 2
PATIENTS & STAFF CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

First 3 hours	**Time**	**Signature**
Commence and maintain log all of all decisions/ actions		
Account for all staff and patients		
Liaise with Renal Executive Team/Department leads to keep staff informed		
Arrange for any injuries to staff/patients to be assessed		
Contact relatives of any injured personnel/patients		
Arrange for emergency welfare and catering for on site staff/patients		
Ensure arrangements are in place to facilitate the ongoing care and treatment of patients		
Next 12 hours	**Time**	**Signature**
Reassure staff and patients that suitable procedures are in place		
Determine staffing level requirements at the new/temporary location **See Section 3**		
Organise transport for the relocation of staff/patients to alternative locations if required		
Inform patients relatives of any relocation		
Next 24 hours	**Time**	**Signature**
Arrange for any Datix (CAE) forms to be completed		
Arrange for staff to be advised on any changes to their place of work		
Ensure that all staff are fully supported , monitoring working hours and arranging relief at frequent intervals		
Organise any temporary staff required		

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 3
INFORMATION TECHNOLOGY CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

The computer systems operated by the Trust are the subject of a separate set of specific disaster recovery procedures. This should be borne in mind when considering computer recovery procedures.

Additionally, if a formal computer recovery agreement exists with another supplier, this task list should be cross-referenced to the procedures agreed with that service supplier.

First 3 hours	**Time**	**Signature**
Commence and maintain log of key decisions/actions		
Systems Manager to liaise with 3rd Party Software suppliers		
Liaise with computer help desk		
Confirm availability of key staff		
Next 12 hours	**Time**	**Signature**
In liaison with ICT determine extent of damage to computer systems and identify priorities for recovery		
Allocate duties as appropriate to staff to begin recovery of the hardware and key systems, for example Proton.		
Review availability of terminals and communications links on site		
Next 24 hours	**Time**	**Signature**
Consider ordering replacement hardware/software via ICT dept		
Obtain emergency supplies of consumables if necessary.		
Liaise with premises checklist holder who is arranging office accommodation to ensure computer requirements are taken into consideration		

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 4
TELECOMMUNICATION CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

First 3 hours	**Time**	**Signature**
Commence and maintain log of key decisions/actions		
Assess damage to telecommunications equipment. Phones, Fax etc		
Liaise with the Estates Manager and Switchboard		
Assess the numbers and consider the use of mobile telephones		
If necessary, arrange for incoming calls to be temporarily diverted to another service location. Alternatively service provider to provide a pre-recorded message giving another telephone number to use		
Next 12 hours	**Time**	**Signature**
Inform Switchboard of telephone requirements and of location of any alternative accommodation		
Access/Assemble list of contact numbers as soon as possible		

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 5
PRESS & COMMUNICATION CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

First 3 hours	**Time**	**Signature**
Commence and maintain a full log of the decisions/ actions taken during the incident and subsequent recovery phase		
Next 12 hours	**Time**	**Signature**
Liaise with the Communications Manager to:		
Agree content of press release/information bulletin with the Communications Manager Consider distribution to: Chief Executive Trust Board members Switchboard Local media (local radio and TV) Relevant external bodies		
Renal Executive Team to brief the switchboard on the routing of external queries to the appropriate point		
Key person to list all telephone numbers for key staff, inform switchboard and distribute list to all other directorates and relevant external bodies		
Ensure that Communication Department and Switchboard have a prepared statement for answering queries		
Renal Executive Team arrange for message to be put out via the local radio networks. This can be used to communicate both to staff and clients/public.		

LEAVE BLANK – ONLY FOR COMPLETION IF INVOKED
TIMESCALES ARE MAXIMUM ALLOWABLE – YOU MAY NEED TO INTIATE BEFORE THE TIMES STIPULATED

CARD 6
SALVAGE CHECKLIST

Date: **Time:**

Responsible person: **Signature:**

First 3 hours	**Time**	**Signature**
Commence and maintain log of key decisions/actions		
Review salvage list (completed with senior members of the renal team including renal technical team)		
Liaise with Fire and Rescue Service, where appropriate		
Liaise with Police, where appropriate		
Liaise with Estates (VINCI) staff		
Arrange secure storage for undamaged contents		
Next 12 hours	**Time**	**Signature**
Using an inventory document, assess the state of furniture and Equipment into three categories Categories: 1) Salvaged and in working order 2) Salvaged but requiring servicing or refurbishment 3) Damaged beyond repair or destroyed		
Liaise with Renal Executive team to replace items of equipment		
Next 24 hours	**Time**	**Signature**
Arrange clean-up, repair, refurbishment operations, as appropriate		

End of clinical content
Guideline Governance
Implementation (If the guideline relates to a service, pathway or external agency, provide details and reference any associated clinical operating procedure (COP) or corporate business record (CBR))
Text
Training (Provide details of how any associated training is delivered, target audience, and if online training is available provide link. If training provided in Trust or Departmental induction, please specify to which staff groups.)
Simulations, for example, fire safety Discuss scenario's with all staff groups
Patient Information (Reference any associated Patient information leaflets)
No patient information leaflets for this guideline

Audit & Monitoring (Detail how the implementation and effectiveness of the clinical guideline will be monitored)				
Aspect being monitored	Monitoring method	Responsible department(s)	Frequency	Group / committee receiving report & responsible for actions
Performance against the standard action for an emergency (simulation) Compliance of mandatory training, eg, fire safety Staff awareness of the content of Loss of Emergency Services Staff sickness	Audit	All clinical areas: Ward 50 PD Day Case Unit Haemodialysis Units including satellite units	6 monthly	Clinical Forum QUIPs
End of Governance content				

Guideline References

CEBIS Evidence Summary (, NICE Guidelines, and other National Guidance. Other national guidance may include those issued by speciality college, patient safety agency, monitoring agencies, or other external governing bodies)

References cited in guideline	Grade*
Gwyneth Lawson (2012) University Hospitals of North Staffordshire NHS Trust – Section 2 – Continuity Check Lists	5
University Hospitals Coventry & Warwickshire NHS Trust Fire Safety Policy and Procedures V3 (2016)	5

***Grade:- The references are graded through the CEBIS process according to the criteria outlined below.**

Grade of evidence	**Based on**
1	Systematic review or meta-analysis
2	Randomised controlled trial/s
3	Controlled study without randomisation (e.g. case controlled) or quasi-experimental study, such as a cohort study
4	Descriptive studies such as case series and reports.
5	Expert opinion, narrative review

Add any Appendices below

(Please use a "Page Break" before each appendix, and list each clearly in the section on the title page. Appendices may include a summary, a flowchart, a proforma, or other materials, but its purpose must be clearly identified)

Appendix 1

ACTION LOG

LOG OF DECISIONS AND ACTIONS

Commenced:
Date: **Time:** **By Whom:**

It is essential to log all decisions and actions taken.

Log No	Action	Passed To		Date/Time Completed	Comments
		Who	Date/Time		

Appendix 2

EXPENDITURE

Log of Expenditure Decisions and Commitments (Verbal and written orders for goods/services)

Commenced: **Date:** **Time:** **By whom:**

It is essential to log all decisions and actions taken

Date & Time	Decision	Order No:	Supplier	Cost £	Description of good/service

Appendix 3

REVIEW & TESTING SCHEDULE

A detailed schedule for testing the Service Continuity Plan should be drawn up and inserted here.

The schedule should indicate how and when each element of the plan will be reviewed and tested.

ANNUAL REVIEW

Date of Annual Review	Person Responsible	Date Completed

Emergency Evacuation drills should be carried out at a minimum of once per year (or sufficient to include all staff) and documented using a written report as deemed necessary

EXERCISE/TESTING SCHEDULE

Date of Exercise/ Test	Brief outline of Test	Identified Actions	Person responsible
	Eg Fire Drill		

Appendix 4

Form to evaluate the outcome of the Fire Drill (Simulation)

Date of Evacuation Drill……

Names of staff present for the drill:

Was each patient taken off dialysis in a timely manner? **Yes** **No**

Was the correct procedure followed?

- **blood pump stopped**
- **blood lines and fistula needles/catheter lumens clamped**
- **patient disconnected from circuit** **Yes** **No**

Were patients/carers told to move calmly to the evacuation assembly point? **Yes** **No**

Was a roster taken of patient/carer and staff names? **Yes** **No**

Was the Renal Executive team informed? **Yes** **No**

Overall assessment of the evacuation drill

Comments:

Areas for improvement:

Appendix 5

KEY STAFF NEEDED TO GET SERVICE BACK TO OPERATIONAL ACTIVITY

Name	Designation	Office No	Mobile No	Home No
Simon Fletcher	Clinical Lead for Renal Services	Via switchboard		
Dr A Short Dr D Ford Dr A Stein Dr Hamer Dr Ayub Dr Kanji Dr Appunu Dr Krishnan Dr Anastassiadou	Renal Consultant on Call	Out of hours – via switchboard		
Robert Spencer	General Manager	Via switchboard		
Kay Wilkinson	Modern Matron for Renal Services	28265 Out of hours via switchboard		
Paul McCabe	Clinical Technology Manager	In hours - Out of hours via switch board		
Renal Technologist on - call		Out of hours via switch board		
Fatuma Rajab Jo Vaughan Aimee Brough	Main Unit HD Managers	024 76 968260		
Lynda Barnacle	Lucy Deane Satellite Unit Manager. George Eliot Hospital	024 76 865692		
Cristina Bajan	Ash Satellite Unit Manager Rugby St Cross Hospital	33845		
Razia Bibi	Whitnash Satellite Unit Manager	01926 470309		
Lyn Hansen	Stratford Satellite Unit Manager	01789265520		
Natalie Millidge	Peritoneal Dialysis Manager	28266		
Nikki Dignan	Ward 50 Manager	28262		
Speciality Management Team (In Hours)	Associate Director Deputy Associate Director Directorate Manager Professional Head of Nursing	Via switchboard		

Speciality Management Team (Out of Hours)	On Call General Manager	Via Switchboard		
Information Technology (In Hours)	Help Desk	28000		
Information Technology (Out of hours)	On call team	Via switchboard		
Barry Hayward	Transport Liaison Officer		07795027230	

USEFUL CONTACTS

(Add as necessary)

Organisation	**Purpose (e.g. supplier of equipment)**	**Contact name & address**	**Tel no/Mobile**	**Email and Web address**
Braun	Supply dialysis equipment and consumables	Thorncliffe Park, Sheffield Customer Service Fax Email: customercare_ba.uk@bbraun.com	0114 225 9102 0114 225 9093	
Fresenius (Amgen) (Venofer)	Delivery of Medication	Fresenius Medical Care, Nunn Brook Road, Huthwaite, Sutton-in-Ashfield, NG17 2HU	01623 445 136	
NHS Blood and Transplant Service	Supply patient information	Blood and Transplant Service, Vincent Drive, Edgbaston, B15 2SG	0121 253 4103	
Baxter Healthcare Ltd	Supply dialysis equipment& consumable	Baxter Healthcare ltd, Salhouse Road, Brackmills Industrial Estate, Northampton, NN4 7BR	Customer services Dept From landline: 0800 0234 002 From Mobile: 0370 6099 101	

Appendix 6 – 11 – Renal Technicians Responsibilities

Renal Technologists' actions required to ensure operation of plant if night time capacity is required

Note: It is anticipated that night shifts will be used for patients requiring no longer than a 3 hour treatment and will commence at 00:30 and finish no later than 05:00 to allow regeneration of plant.

UHCW

- Temporarily suspend Monday and Friday Nephrosafe disinfects and reprogramme to a single disinfect on Sunday starting at 03:00. Note: If the emergency situation lasts for more than 2 weeks add the extra central thermic cycle to all Dialog equipment.
- Inform Vinci that extra salt will be required and ensure there is an adequate number of filters available.
- Ensure the carbon columns and multimedia filters are programmed to backwash after 05:00 (cycles should only take no longer than 30 mins). See DWA/Vivendi 01147 user manual. Note carbon currently set at 04:00 and 05:00 multimedia at 01:00 and 02:00 (maybe bypassed if appropriate).

ASH

- Ensure extra salt is ordered and or available.
- Ensure the carbon columns are programmed to backwash after 05:00 (cycle should only take no longer than 30 minutes). Note currently set at 01:30 and 02:00.

LUCY DEANE

- Temporarily suspend Wednesday Nephrosafe disinfects and reprogramme to a single disinfect on Sunday starting at 03:00. Note: If the emergency situation lasts for more than 2 weeks add the extra central thermic cycle to all Dialog equipment.
- Ensure extra salt is ordered and or available.
- Ensure the carbon columns and multimedia filters are programmed to backwash after 05:00 (cycles should only take no longer than 30 minutes) See DWA/Vivendi 01147 user manual

WHITNASH

- Ensure extra salt is ordered and or available.
- Ensure the carbon columns are programmed to backwash after 05:00 (cycle should only take no longer than 30 minutes).

Appendix 7

Loss of Treated Water to UHCW Renal Unit

1. Loss of water will be apparent if dialysis equipment is running – 'Water Supply Disturbed' alarms will be present.
2. The nurse co-ordinator should have informed the technologists in the first instance on 27768 or bleep via switchboard.
3. Out of hours unit staff should have called the helpdesk on 25555. The technologist will ensure the help desk has been contacted.
4. Supply may be intermittent so before patients have their treatments discontinued, if possible wait for estates staff for an assessment of how long the interruption may be.
5. Technical staff should liaise with estates to assess the problem with a view to a solution and timescale for resolution.
6. Communicate with the nurse in charge/co-ordinator at all times.
7. Most problems should be short term and resolvable quickly.
8. It will be Vinci's responsibility to correct and or repair the plant but the following checks may be useful:-

- Check the supply and pressure to the raw water tank if not present there may be an option (via Vinci) to swap supply back to non softened.
- Raw water filters may need replacing.
- Check the supply and pressure to the softened tank.
- If the reverse osmosis units are displaying faults such as break tank empty check there is a suitable supply, the pre filters may need replacing. Reset if possible.
- If the Nephrosafe is displaying any alarms or is not in run mode try and quit/acknowledge the alarm.
- Refer to operator manual RO1500 section 6.5 Messages and Errors

9. If the supply to the trust is affected, Vinci in conjunction with the trust estates department and the renal technologist will be instrumental in liaising with the water provider (STWA) to provide a quick resolution. This may for example require the use of bowsers as a temporary supply of potable water.
10. If the supply can be re-instated within 24 hours carry out the plant room Monday checks as per ROCHEC-5000 Rev7.
11. If the supply can be re-instated within 3 days, replace raw water and pre RO filters and carry out the plant room Monthly checks as per ROCHEC-5000 Rev7 and disinfect the ring in conjunction with a central thermic machine disinfection.
12. If the supply cannot be re-instated within 3 days follow Technical Considerations Procedure Appendix 1.

Appendix 8

Loss of Treated Water to Ash dialysis Renal Unit

1. Loss of water will be apparent if dialysis equipment is running – 'Water Supply Disturbed' alarms will be present.
2. The nurse co-ordinator should have informed the technologists in the first instance on 27768 or bleep via switchboard.
3. Out of hours unit staff should have called the helpdesk on 25555. The technologist will ensure the help desk has been contacted.
4. Supply may be intermittent so before patients have their treatments discontinued, if possible wait for estates staff for an assessment of how long the interruption may be.
5. Supply may be intermittent so before patients have their treatments discontinued, if possible wait for estates staff for an assessment of how long the interruption may be.
6. Technical staff should liaise with estates to assess the problem with a view to a solution and timescale for resolution.
7. Communicate with the nurse in charge/co-ordinator at all times.
8. Most problems should be short term and resolvable quickly.
9. The following checks may be useful:-

- Check the supply and pressure to the raw water tank if not present there may be a supply problem see point 10 below.
- If the raw water supply is present the raw filter may need replacing,
- If the reverse osmosis units are displaying faults such as break tank empty check there is a suitable supply, the pre filters may need replacing. Reset if possible.

10. If the supply to the trust is affected, Vinci in conjunction with the trust estates department and the renal technologist will be instrumental in liaising with the water provider (STWA) to provide a quick resolution. This may for example require the use of bowsers as a temporary supply of potable water.
11. If the supply can be re-instated within 24 hours carry out the plant room Monday checks as per ROCHEC-STC2.
12 If the supply can be re-instated within 3 days, replace the raw water filters and pre RO filters and carry out the plant room Monthly checks as per ROCHEC-STC2. Carry out a chemical disinfection as per MAIN RING DISINFECTION USING DIALOX/OXONIA - St CROSS Procedure.
13. If the supply cannot be re-instated within 3 days follow Technical Considerations Procedure Appendix 1.

Appendix 9

Loss of Treated Water to Lucy Deane Renal Unit

1. Loss of water will be apparent if dialysis equipment is running – 'Water Supply Disturbed' alarms will be present.
2 The nurse co-ordinator should have informed the technologists in the first instance on 02476 96 7768 or bleep via switchboard.
3 Supply may be intermittent so before patients have their treatments discontinued, if possible wait for estates staff for an assessment of how long the interruption may be.
4 Technical staff should liaise with estates to assess the problem with a view to solution and timescale for resolution.
5 Communicate with the nurse in charge at all times.
6 Most problems should be short term and resolvable quickly.
7 The following checks may be useful:-

- Check the supply and pressure to the raw water tank if not present there may be an option (via George Eliot estates) to swap supply back to the hospital softened supply.
- Check the supply and pressure to the raw water tank.
- If the reverse osmosis units are displaying faults such as break tank empty check there is a suitable supply, the pre filters may need replacing. Reset if possible.
- If the Nephrosafe is displaying any alarms or is not in run mode try and quit/acknowledge the alarm.
- Refer to operator manual RO1500 section 6.5 Messages and Errors

8. If the supply to the trust is affected, George Eliot estates in conjunction with the renal technologist will be instrumental in liaising with the water provider (STWA) to provide a quick resolution. This may for example require the use of bowsers as a temporary supply of potable water.
9. If the supply can be re-instated within 24 hours carry out the plant room Monday checks as per ROCHEC-GE3.
10 If the supply can be re-instated within 3 days, replace the raw water filters and pre RO filters and carry out the plant room Monthly checks as per ROCHEC-GE3 and disinfect the ring in conjunction with a central thermic machine disinfection.
11. If the supply cannot be re-instated within 3 days follow Technical Considerations Procedure Appendix 1.

Appendix 10

Loss of Treated Water to Whitnash Renal Unit

1. Loss of water will be apparent if dialysis equipment is running – 'Water Supply Disturbed' alarms will be present.
2. The nurse co-ordinator should have informed the technologists in the first instance on 02476 96 7768 or bleep via switchboard.
3. Supply may be intermittent so before patients have their treatments discontinued, if possible wait for estates staff for an assessment of how long the interruption may be.
4. Technical staff should liaise with estates to assess the problem with a view to solution and timescale for resolution. Contact via switchboard 01926 317700.
5. Communicate with the nurse in charge at all times.
6. Most problems should be short term and resolvable quickly. Possible cause could be:-
7. The following checks may be useful:-

- Check the supply and pressure to the raw water tank.
- Check the supply and pressure to the raw water tank and that the booster pumps are running. Switch pump on if this has not happened automatically.

8. If the supply to the Rehab. Hospital is affected, estates in conjunction with the renal technologist will be instrumental in liaising with the water provider (STWA) to provide a quick resolution. This may for example require the use of bowsers as a temporary supply of potable water.
9. If the supply can be re-instated within 24 hours carry out the plant room Monday checks as per ROCHEC-WDU.
10 If the supply can be re-instated within 3 days, replace the raw water filters and pre ring filters and carry out the plant room Monthly checks as per ROCHEC-WDU and disinfect all RO's before use.
12. If the supply cannot be re-instated within 3 days follow Technical Considerations Procedure Appendix 1.

Appendix 11

DISASTER RECOVERY INFORMATION

Technical Considerations When Bringing Haemodialysis Facilities' Water Systems Back on Line After a Disaster Lasting Longer than 3 three days.

These directions are for use if the building has not been flooded and after utilities have been restored, the physical facility is in operational condition, and adequate potable water flow and pressure are available.

- Remove and replace all raw filters.
- Check for softened supply if not present a regeneration of the softeners may be required.
- Flush all pretreatment equipment to drain for at least 30 minutes to remove the stagnant water from the system.
- Test the level of total chlorine in the source water (expect it to be higher than normal).
- Test total chlorine after the carbon column to verify that the water is <0.1ppm or at the usual level for the plant.
- If the total chlorine after the carbon column is significantly raised when compared to usual levels the column may need rebedding. Refer to Vinci at UHCW or service provider at satellites.
- If the total chlorine is similar to pre-incident levels, remove and replace all (RO) prefilters and turn on the RO units.
- Flush the distribution system (to drain if possible).
- Disinfect the RO's and the distribution system as appropriate (use the Nephrosafe if fitted).
- Compare the product water quality readings (in particular endotoxin and TVC to check the integrity of the ultrafilter) with historical data. A significant difference could mean that the RO membranes are damaged, or the quality of the incoming water has drastically decreased.
- Increase frequency of monitoring:
    - Check total chlorine with chlorometer on a daily basis until confident levels are normal
    - Verify hourly that the product water quality is acceptable.
    - Monitor water cultures and endotoxin at least weekly. If possible, test for endotoxin on site daily.
- Draw representative water cultures and endotoxin tests as soon as possible. If possible to test for endotoxin on site, do this before treating patients; report the results to the Clinical Director.
- Anticipate an increased level of particulate matter in the water. Monitor the pressure drop across pre-treatment components and backflush as necessary.
- Monitor closely chlorine levels post carbon columns rebedding may be necessary.
- Send a sample of product water for Renal Association Guidelines analysis as soon as is practical.
- Clean the RO membranes as soon as is practical. Ideally before returning to service.

Dialysis Machines

- Chemically disinfect the dialysis machines and rinse. Test for residual disinfectant levels to ensure proper rinsing. HDF machines may require filter replacement.

Note:

If the product water TDS is high and the percent rejection is in line with historical performance, then the RO membranes are most likely good, but the feed water may have a higher than usual level of contaminants.

Monitor RO conductivity and compare with historical values, if the conductivity is significantly raised the RO membranes may need cleaning or replacing.