

Rationale for insertion of and follow-up management of Percutaneous Nephrostomy Tube Local policy

Department / Service:	Urology / Interventional Radiology
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Approved by:	Urology Directorate Surgical Division Quality Governance
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This is the most current document and should be used until a revised version is in place	
Target Organisation(s)	Worcestershire Acute Hospitals NHS Trust
Target Departments	Users of Nephrostomy services
Target staff categories	Trust clinicians who would require nephrostomy insertion services

Plan Overview:

This SOP sets out the key steps necessary to deliver safe care for patients who have had percutaneous nephrostomy insertion.

The process shown will assist Specialty clinical teams, Interventional Radiologists and Urologists to follow and ensures that care is harmonised and that accountability for future post-nephrostomy care plans is in the patient pathway.

Key amendments to this document

Date	Amendment	Approved by:
September 2021	New document approved	Urology Directorate/ Surgical Division Quality Governance
July 2024	Document reapproved with no changes	Mr Koo

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1. Introduction

Urine is made in the kidneys. Urine travels down to the bladder via a tube called the ureter. The ureters can become blocked for a number of reasons (e.g. kidney stones or cancer). A blocked ureter can stop the kidney from working properly and cause kidney blockage (hydronephrosis) and kidney failure. Also, if the urine that is blocked becomes infected, it can cause pus formation and sepsis.

A nephrostomy is an opening between the kidney and the skin. A nephrostomy tube is a thin plastic tube that is passed from the back, through the skin and then through the kidney, to the point where the urine collects. Its job is to temporarily drain the urine that is blocked. This allows the kidney to function properly, protects it from further damage and also helps clear any infection. It is usually done under local anaesthetic with sedation. Some patients have a long-term nephrostomy tube as a form of urinary diversion long term and for others it is a temporary manoeuvre whilst they recover from urinary tract infection / sepsis and await definitive surgery to treat the cause of the ureteric obstruction.

1.1 Indication and contraindications:

The indications for nephrostomy tube insertion are:

- 1) Kidney or ureteric obstruction causing AKI or pus/sepsis
- 2) Kidney or ureteric obstruction from cancer, stricture or stones

The contraindications for nephrostomy tube insertion are:

- 1) Coagulopathy, increased bleeding risk from underlying haematology condition
- 2) Patient cannot lie prone
- 3) Patient with morbid obesity
- 4) Patient who could not tolerate procedure / uncooperative patient

1.2 Problems and risks:

There are potential problems associated with nephrostomy, such as pain, discomfort (can cause difficulties sleeping), blockages, encrustation/stone formation, falling out, infection, bleeding/AV malformation/pseudoaneurysm, skin issues around nephrostomy site. There is a small but significant risk of inadvertent perforation of organ structures (eg bowel, liver, lung, spleen – which may require further corrective open surgery) during insertion of the nephrostomy. Furthermore, the nephrostomy tubes are not permanent, and patients need to return to Radiology Department for regular changes (every 2-3 months), if nephrostomy tubes are to be in place for long-term. Please refer to Patient information leaflet WAHT-RAD-018 for the specific risks.

1.3 Decision for insertion:

However, the decision to insert nephrostomy tubes is not straight forward, especially for cancer causing obstructive uropathy. In general, cancer causing obstructive uropathy is a hallmark of significant cancer progression and associated with poor prognosis and poor survival.

The decision should take into account the patient's wishes (in view that patient's quality of life could be negatively affected- living with tubes/urinary bag with its associated problems), any further plans for intervention/treatment, as well as their prognosis in general, and not just responding to a result showing obstructive uropathy.

With respect to malignant obstruction, nephrostomy should preferably not be viewed as a good palliative option, especially where there are no plans for further intervention/treatment. Nephrostomy insertion could improve renal failure but it also prolongs time for metastases to set in, which can cause further metastatic symptoms of pain/bleeding/other organ obstruction. The patient should be appropriately counselled for the procedure and risks, by the respective cancer specialty host Consultant following advice from senior urology team.

Local Trust audit on nephrostomy tube inserted for malignant causes, demonstrated a poor median survival of 73 days (see Appendix 1) after insertion. Available literature (Wilson et al, 2005) also suggests similar outcome results.

Wilson JR, Urwin GH, Stower MJ. The role of percutaneous nephrostomy in malignant ureteric obstruction. *Ann R Coll Surg Engl.* 2005 Jan;87(1):21-4. doi: 10.1308/1478708051432. PMID: 15720902; PMCID: PMC1963830.

2. Definitions and/or Abbreviations

Trust	Worcestershire Acute Hospitals NHS Trust
Staff	All employees of the Trust including those managed by a third party on behalf of the Trust
Invasive procedure	A procedure that has the potential to be associated with a Never Event if safety standards are not set and followed
NatSSIPs	National Safety Standards for Invasive Procedures
LocSSIPs	Local Safety Standards for Invasive Procedures
WHO	World Health Organisation
NPSA	National Patient Safety Agency
ICE	Integrated Clinical Environment – web-base request system used in the Trust
NOAC	Novel Oral Anti-Coagulants
LMWH	Low molecular weight heparin

3. Responsibility and Duties

Every team member is responsible for the delivery of safe care. Every member of the procedural team is responsible for ensuring that the required safety checks are followed accurately. The fundamental basis of the delivery of the LocSSIP is the sharing of responsibility between every member of the procedural team. Specific responsibilities and accountability for completion of the process include:

3.1 Referring Clinical Professional

All medical professionals referring a patient for nephrostomy insertion procedure will ensure that relevant information required is on the ICE request. Any additional information about risk factors, e.g. major comorbidities, blood test results or relevant anticoagulation use (ie. Warfarin, NOAC, dipyridamole, high dose LMWH, heparin use), must be highlighted. Any potential difficulties (low pain threshold, regular recreational drug usage) must be clearly stated and, where possible, additional communication to the Interventional Radiology/Theatre team made to ensure relevant

preparation is in place prior to patient having the procedure. The patient's coagulation profile/INR must be available. The referral clinician is responsible to reverse/correct coagulopathy as appropriate and arrange any necessary supportive care/treatment to ensure safe pre- and post-insertion of nephrostomy for patient. For urgent/emergency nephrostomy insertion, the referring Clinical team needs to verbally discuss with an Interventional Radiologist and Urologist.

Following successful insertion of nephrostomy, the referring clinical team will ensure post-procedural care, as specified by the Interventional Radiologist. More importantly, the referring clinical team needs to decide the future plans for the nephrostomy, which could be:

- 1) Long-term nephrostomy with regular 3 monthly changes
- 2) Convert to Antegrade ureteric stent
- 3) Removal after intervention/treatment

It is the responsibility of the referring clinical team to maintain follow up and plans for patient with nephrostomy inserted. Maintenance of a Nephrostomy register is recommended, so that patients are not lost to follow-up. Further advice could be obtained from senior urology team if needed. ICE request for 1) to 3) can be made after discussion with the relevant clinical and Interventional Radiology teams.

Once a decision has been made for a long-term nephrostomy tube, the referrer **MUST** book the first nephrostomy exchange on ICE (within 3 months of its initial placement). The Radiology department will then arrange subsequent nephrostomy tube exchanges.

3.2 Booking Team

All members of the booking team arranging an appointment for a patient undergoing nephrostomy procedure will ensure that patients are booked appropriately. Diabetic, latex allergic or immunosuppressed patients should be first on a list. Patients with an infection risk should be last on the list.

The Booking team should schedule lists according to local scheduling rules. Interventional Radiology lists should not be overbooked. Any additional information such as a high risk patient e.g. major comorbidities or use of high risk medication should be highlighted on the referral on ICE. Any high risk procedures should be clearly stated and, where possible, additional communication to the endoscopy unit made to ensure relevant preparation is in place prior to patient having the procedure.

3.3 Nursing/Radiographer teams

All members of the nursing/radiographers teams will ensure that all relevant checks required on the safety checklist are performed. They should ensure that any high risk procedures or high risk patients are identified and all relevant arrangements made to ensure the best possible outcome for the patient. This includes preparation and availability of any specialised equipment and any omissions, discrepancies or uncertainties identified during any stage of the safety checklist are resolved.

3.4 Interventional Radiologist /Clinicians

All Interventional clinicians will participate in the safety checklist and ensure that all relevant checks required on the safety checklist are performed. They should ensure that any high risk procedures or high risk patients are identified and all relevant arrangements made to ensure the best possible outcome for the patient. They should ensure any omissions; discrepancies or uncertainties identified during any stage of the safety checklist are resolved.

4. Implementation

4.1 Plan for implementation

As soon as approved at Directorate meeting

4.2 Dissemination

Trustwide

4.3 Training and awareness

Human Factors Training offered by Worcestershire Acute Hospitals NHS Trust

5. Monitoring and compliance

The NHSLA requirements are –

Organisations should measure, monitor and evaluate compliance with the minimum requirement within the NHSLA Risk Management Standards. This should include the use of audits and data related to the minimum requirements. The organisation should define the frequency and detail of the measurement, monitoring and evaluation processes.

Monitoring demonstrates whether or not the process for managing risk, as described in the approved documentation, is working across the entire organisation. Where failings have been identified, action plans must have been drawn up and changes made to reduce the risks.

Monitoring is normally proactive - designed to highlight issues before an incident occurs – and should consider both positive and negative aspects of a process.

The table below should help to detail the ‘Who, What, Where and How’ for the monitoring of this Policy.

Trust Policy

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: <i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i>	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
	These are the 'key' parts of the process that we are relying on to manage risk. We may not be able to monitor every part of the process, but we MUST monitor the key elements, otherwise we won't know whether we are keeping patients, visitors and/or staff safe.	What are we going to do to make sure the key parts of the process we have identified are being followed? (Some techniques to consider are; audits, spot-checks, analysis of incident trends, monitoring of attendance at training.)	Be realistic. Set achievable frequencies. Use terms such as '10 times a year' instead of 'monthly'.	Who is responsible for the check? Is it listed in the 'duties' section of the policy? Is it in the job description?	Who will receive the monitoring results? Where this is a committee the committee's specific responsibility for monitoring the process must be described within its terms of reference.	Use terms such as '10 times a year' instead of 'monthly'.
Pg 4-5	Compliance to Clinician Team responsibilities for pre-procedure and post-procedure follow up.	DATIX records of non-compliance	Yearly	Urology/Radiology Governance Leads	Directorate Manager	Yearly

Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Dr Sidi Rashid, Consultant Interventional Radiologist
Julia Rhodes, Quality Governance Manager for Radiology
Susan Aston, Quality Governance Manager for Urology

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Urology Directorate meeting
Radiology Directorate meeting
Surgical Division Governance meeting

Appendix 1

The Role of Percutaneous Nephrostomy Insertion in Malignant Obstructive Uropathy.

Background: Urgent percutaneous nephrostomy placement is frequently performed to address ureteric obstruction secondary to pelvic or abdominal malignancy. Traditionally long-term survival post-nephrostomy insertion has been variable, however, obstructive uropathy is often seen as a manifestation of disease progression.

Aims: To assess patterns of nephrostomy insertion for patients presenting with malignant ureteric obstruction in the modern era.

Method: We performed a retrospective analysis of the nephrostomy service provided by our department from January 2011 to June 2013. We focused on the indication of malignant obstructive uropathy with a minimum of 5 months follow up. Patient demographics, procedure details, indication and survival were recorded in all cases. Each nephrostomy insertion was considered a separate event.

Results: A total of 202 nephrostomy procedures were performed for all indications. The majority were inserted for ureteric obstruction secondary to pelvic or abdominal malignancy (n=138, 68%). There were 46 (33%) female and 92 (67%) male patients. Median patient age was 72.2 years. Obstruction secondary to prostate cancer (34%) and bladder cancer (34%) were the most frequent indication for intervention. There were 107 *de novo* insertions (78%) with 31 repeat procedures (22%). A small number of nephrostomies were inserted as an emergency, outside of normal working hours (n=14, 10%). Median survival post-insertion was 73 days with only 30% of this patient group demonstrating long-term survival. A significant group of patients failed to survive for >30 days post-procedure (n=19, 12%).

Conclusion: Nephrostomy insertion for malignant ureteric obstruction can be a hallmark of disease progression. Patients who undergo this invasive procedure continue to have poor survival characteristics. Each should be counselled carefully and on an individual basis before undertaking nephrostomy insertion.

Supporting Document 1 – Equality Impact Assessment form

To be completed by the key document author and included as an appendix to key document when submitted to the appropriate committee for consideration and approval.

Please complete assessment form on next page;

Herefordshire & Worcestershire STP - Equality Impact Assessment (EIA) Form
Please read EIA guidelines when completing this form

Section 1 - Name of Organisation (please tick)

Herefordshire & Worcestershire STP		Herefordshire Council		Herefordshire CCG	
Worcestershire Acute Hospitals NHS Trust	x	Worcestershire County Council		Worcestershire CCGs	
Worcestershire Health and Care NHS Trust		Wye Valley NHS Trust		Other (please state)	

Name of Lead for Activity	Mr Vincent Koo
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Details of individuals completing this assessment	Name	Job title	e-mail contact
	Vincent Koo	Consultant Urology	v.koo@nhs.net
Date assessment completed			

Section 2

Activity being assessed (e.g. policy/procedure, document, service redesign, policy, strategy etc.)	Title: Rationale for insertion of and follow-up management of Percutaneous Nephrostomy Tube		
What is the aim, purpose and/or intended outcomes of this Activity?			
Who will be affected by the development & implementation of this activity?	<input type="checkbox"/> Service User <input checked="" type="checkbox"/> Patient <input type="checkbox"/> Carers <input type="checkbox"/> Visitors	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Staff Communities Other _____
Is this:	<input checked="" type="checkbox"/> Review of an existing activity <input type="checkbox"/> New activity <input type="checkbox"/> Planning to withdraw or reduce a service, activity or presence?		

What information and evidence have you reviewed to help inform this assessment? (Please name sources, eg demographic information for patients / services / staff groups affected, complaints etc.	
Summary of engagement or consultation undertaken (e.g. who and how have you engaged with, or why do you believe this is not required)	
Summary of relevant findings	

Section 3

Please consider the potential impact of this activity (during development & implementation) on each of the equality groups outlined below. **Please tick one or more impact box below for each Equality Group and explain your rationale.** Please note it is possible for the potential impact to be both positive and negative within the same equality group and this should be recorded. Remember to consider the impact on e.g. staff, public, patients, carers etc. in these equality groups.

Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Age				
Disability				
Gender Reassignment				
Marriage & Civil Partnerships				
Pregnancy & Maternity				
Race including Traveling Communities				
Religion & Belief				
Sex				
Sexual Orientation				
Other Vulnerable and Disadvantaged				

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Equality Group	Potential <u>positive</u> impact	Potential <u>neutral</u> impact	Potential <u>negative</u> impact	Please explain your reasons for any potential positive, neutral or negative impact identified
Groups (e.g. carers; care leavers; homeless; Social/Economic deprivation, travelling communities etc.)				
Health Inequalities (any preventable, unfair & unjust differences in health status between groups, populations or individuals that arise from the unequal distribution of social, environmental & economic conditions within societies)				

Section 4

What actions will you take to mitigate any potential negative impacts?	Risk identified	Actions required to reduce / eliminate negative impact	Who will lead on the action?	Timeframe
How will you monitor these actions?				
When will you review this EIA? (e.g in a service redesign, this EIA should be revisited regularly throughout the design & implementation)				

Section 5 - Please read and agree to the following Equality Statement

1. Equality Statement

1.1. All public bodies have a statutory duty under the Equality Act 2010 to set out arrangements to assess and consult on how their policies and functions impact on the 9 protected characteristics: Age; Disability; Gender Reassignment; Marriage & Civil Partnership; Pregnancy & Maternity; Race; Religion & Belief; Sex; Sexual Orientation

1.2. Our Organisations will challenge discrimination, promote equality, respect human rights, and aims to design and implement services, policies and measures that meet the diverse needs of our service, and population, ensuring that none are placed at a disadvantage over others.

1.3. All staff are expected to deliver services and provide services and care in a manner which respects the individuality of service users, patients, carer's etc, and as such treat them and members of the workforce respectfully, paying due regard to the 9 protected characteristics.

Trust Policy

Signature of person completing EIA	
Date signed	
Comments:	
Signature of person the Leader Person for this activity	
Date signed	
Comments:	



Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval