

SCHEDULE 2 – THE SERVICES

A. Service Specifications

Service Specification No:	1653
Service	Complex Gynaecology/ Female Urology: Genito-Urinary Tract Fistulae (Girls and Women aged 16 years and above)
Commissioner Lead	<i>For local completion</i>
Provider Lead	<i>For local completion</i>

1. Scope

1.1 Prescribed Specialised Service

This service specification covers the provision of a safe and effective care pathway including surgical repair, for women with a genito-urinary tract (GUT) fistula where the fistula does not heal spontaneously. A fistula is where urinary fluid leaks or flows out of the vagina and can occur following surgery (such as a caesarean section or colorectal, urological or gynaecological surgery such as a hysterectomy); or an intervention for cancer such as radiotherapy.

A fistula repair is the treatment which takes place following the surgery or intervention which caused or precipitated the fistula – and is referred to as post precipitating surgery.

An intra-operative injury should be repaired on the operating table; whereas if it is post-operative, identified via an acute urine leak or forming fistula, the options of conservative management or acute repair should be discussed with the woman, and if repair is requested, a referral should then be made to the service.

1.2 Description

A genitourinary fistula is an abnormal connection or passage between the female genital tract and the bladder, urethra, or ureters, which if it does not heal naturally, must be corrected by carrying out a surgical repair.

1.3 How the Service is Differentiated from Services Falling within the Responsibilities of Other Commissioners

The service is accessible to all eligible patients with a vesico-vaginal fistula (VVF) or urethro-vaginal fistula (UVF). All commissioned centres must accept referrals for eligible patients meeting the acceptance and clinical criteria.

2. Care Pathway and Clinical Dependencies

2.1 Care Pathway

The service will ensure the provision of specialist assessment, care and treatment for women and adolescent girls aged 16 and above with a VVF or UVF. Patients under the age of 16 years

are unlikely to require this intervention, but if there is concern that a patient under this age has VVF or UVF, they should be referred to paediatric services and paediatric surgery/urology and a request for advice sent to one of the national centres for this service. Access to treatment will be guided by any applicable NHS England national clinical commissioning policies.

Referrals: The service will accept referrals for patients who are experiencing any fistula (fistulous tract) involving the bladder, urethra or genital tract. Referrals can be made by secondary care clinicians (such as gynaecology, urology and colorectal clinicians) who will initiate tests (to confirm the diagnosis) and refer to the service; or by specialist health care practitioners or specialist staff from other providers. Where there are complex co-morbidities and the specialised referral criteria are met, referrals will be accepted from General Practitioners (GPs) and Local Multi-disciplinary Teams (MDTs).

Referrals may be made by letter, email or telephone and followed up by a formal letter of referral. Whilst all patients should be referred as soon as possible, surgical outcomes will be the same whether referred as an urgent or non-urgent case.

Presentations will be considered to be acute where the referral is made within three weeks of the date of the precipitating surgery and non-acute where the referral is made later or if the fistula arises after radiotherapy or other non-surgical treatment.

Patients will be seen depending on the individual circumstances of their fistula as follows:

- where an individual is referred 'early', usually less than three weeks following the surgery which resulted in the fistula, (known as the precipitating surgery), it is the aim that the referral will first be reviewed by the MDT, the patient will then be seen as an urgent case and the repair carried out before the tissues become unsuitable for repair;
- where the referral is made more than three weeks after the precipitating surgery, the abnormal healing tissues will be unsuitable to attempt urgent repair and the repair surgery must be delayed for a minimum of three months (range three to six months) to optimise the condition of the tissues and the outcome of the repair. In such cases, the patient will be seen in clinic following MDT review and a delayed (after three months) repair will be planned.

Investigations:

Prior to referral to the service, patients will be pre-investigated locally using computerised tomography urogram (CTU) and/or magnetic resonance imaging (MRI) of pelvis to assist the service in planning the route for surgery and other investigations such as cystoscopy and in some cases examination under anaesthetic (EUA) and cystoscopy/ methylene blue instillation may be undertaken. In a small number of cases, if these investigations are not available locally, they will be undertaken by the service, preferably in advance of the first clinic appointment so that the results are available for review by the service's consultant prior to the patient being seen in clinic for the first time. The referring unit should also send details of the pre-operative anaesthetic investigations which were undertaken prior to the precipitating surgery. This will include the results of the following: echocardiograms (ECHOs), electrocardiograms (ECGs), pulmonary function test (PFTs), and baseline bloods as these will enable the national centres to perform a more comprehensive anaesthetic pre-operative assessment at their one stop clinic.

The service will undertake the following investigations appropriate to need:

1. Endoscopy:	
1.1	Cysto-Urethroscopy (M45.1);
2. Functional assessment:	
2.1	Urodynamics (M47.4),

2.2	Videourodynamics (M47.4)
3. Imaging:	
3.1	CTU (U3.2),
3.2	MRI (U085, U09.3),
3.3	Retrograde pyelography (M30.1) (performed at time of Cysto Urethroscopy)
4. Initial drainage procedures:	
4.1	Urethral or Suprapubic Catheterisation of Bladder (M47.8, M38.2)
4.2	Retrograde Ureteric Stenting (M27.4),

Outpatient clinic appointments:

First appointment (One Stop):

- The first clinic appointment will be a 'One-stop' clinic, with the patient first being assessed by the medical team who will then provide counselling on treatment options including the best surgical approach to suit their condition. Options will be (a) vaginal or b) abdominal approach or a c) urinary diversion (either an ileal conduit or a neobladder)) depending on the characteristics of the fistula. The clinicians and patient will then agree a treatment plan.
- The patient will then see the Clinical Nurse Specialist (CNS) or Clinical Nurse Practitioner (CNP) (who will have a special interest in this condition) and will provide advice on skin care; methods for bladder drainage; coping with urinary incontinence and information leaflets on the treatment options that the medical team discussed with the patient and provide any further counselling and support.
- On the day anaesthetic assessment will then take place.
- If the imaging provided with the referral did not enable a clinical decision to be made (was 'unhelpful') the patient will be offered a date for a cysto-urethrogram or cystoscopy and EUA to assess their fistula. If such assessment is not deemed necessary, the patient will either be asked to consent to surgery in clinic and confirm this on the day of the operation or agree a date in one month for a telephone appointment to formally confirm consent for the surgery and address any additional questions.
- They will be offered a date for definitive surgery and agree the date in one month for a telephone appointment to formally confirm consent for their surgery and address any additional questions.
- Following their medical consultation, the patient will be given a detailed treatment plan in writing in advance of surgery.

On referral and following review in clinic, each patient's case including the results of all investigations will be discussed at the Fistulae Monthly MDT meeting and the outcome documented in the patient's notes. The outcome will also be sent to the patient as part of a formal letter and discussed by the consultant/medical team with the patient during their follow-up teleconference consultation. The service's MDT will produce guidelines for catheter care by local services following repair surgery.

Treatment strategy: Patients will be encouraged to be catheter free prior to their fistula surgery to reduce the risk of infection; will be admitted for their definitive surgery on the day of surgery and the procedure will be performed by a surgeon who is an expert in the treatment of fistulae. On a case by case basis and subject to the provider's policy, if a patient has to travel more than two hours to the centre, the provider will arrange for them to go into the patient hotel the night before surgery if there is one. Post-operative care will take place on a ward staffed by nurses experienced in the post-operative care requirements of patients with a fistula. When the patient is comfortable following the repair surgery, they will be discharged home with a urinary catheter in place.

Discharge will generally take place between two to five days after surgery for those who have had a vaginal repair; between five to ten days for those patients who have had an abdominal repair, (with the longer stays related to complexity), and between seven to 14 days for those who have had a urinary diversion. Other than for urinary diversions, inpatient stays of more than ten days are not anticipated and will require exception reporting. Catheters should be in place for a minimum amount of time (just until healing is confirmed) to reduce the risk of infection. Prior to discharge, ward nursing staff will request District Nursing and GP Practice Nurse support to be available for the patient locally once home and share discharge documentation with these staff to ensure that their surgical wound is reviewed in a timely and appropriate manner and the patient is supported with catheter care for the appropriate length of time. A copy of this guidance will be given to the patient so that they will know what local support to expect once they return home. At discharge, the patient will be provided with contact details for the service's CNS to call for advice in the event of any clinical concerns.

A formal cystogram or methyl blue test will take place between one and three weeks after surgery for fistula repair patients, whereas non- ileal conduit (neobladder) urinary diversion patients will have a formal cystogram six weeks post-surgery. If healing following fistula repair is demonstrated on a cystogram/methylene blue test, the indwelling catheter will be removed and the patient will have a trial of void. If healing following none ileal conduit urinary diversion is demonstrated at the six weeks cystogram, they will be admitted for a formal trial of intermittent self-catheterisation (ISC).

Repair Surgery: the main diagnostic codes for this service are ICD10, N360, N820 and N821; operative codes are OPCS4, P251 and P252 plus approach code of first revisional surgery (Y71.3), or second revisional surgery (Y71.6) or third or more revisional surgery (Y71.7).

Follow-Up:

UVF/VVF: The service's CNS/CNP will telephone patients to follow them up one week after discharge and then in the outpatient clinic between one to three weeks following repair, the CNS/CNP will undertake a review following their cystogram and/ or perform a methylene blue test to establish whether the repair wound has healed appropriately. If it has, the CNS/CNP will take the catheter out. If it has not, the catheter will be left in for another one to two weeks after which the patient will have repeat imaging/methylene blue and will be reviewed in the outpatient clinic by the CNS/CNP again. Unless there are problems, patients will then be reviewed routinely in the Consultant outpatient clinic (or by telephone if the patient prefers) between three and four months after surgery to assess short-term outcomes. If all is well, the patient will have a face or telephone review with the Consultant for the final time at 12 months post-surgery and will then be discharged to their GP for routine follow up. Over and above the psychological support that the medical team and the CNS/CNP will provide, the team will ask the GP to make an onward referral to local services for any additional psychological support as appropriate.

Ileal conduit: If the procedure was an ileal conduit, a form of urinary diversion, the patient will have a renogram in an outpatient setting twelve weeks after surgery which will be reviewed when they attend outpatients for review by the Consultant and the Stoma Nurse, ideally but not necessarily on the same day as the renogram is performed.

Neobladder: If the procedure was a neobladder (a form of urinary diversion), a cystogram will be performed in an outpatient setting and the patient will then be seen six weeks after surgery by both the Consultant and the Urinary Diversion CNS for removal of catheter and formal initiation of intermittent self-catheterisation (ISC).

For all procedures, if the repair has healed appropriately, the CNS will take the catheter out, if it has not healed, the catheter will be left in for a further period, then reviewed again following a

repeat cystogram one to two weeks later. Unless there are problems with healing, the patient will be reviewed routinely in the Consultant outpatient clinic three to four months after surgery to assess short-term outcomes. If all is well, then a patient who has had an ileal conduit or neobladder will have a telephone review with the Consultant for the final time at 12 months after surgery and will then be discharged for life-long follow up with their local urology team.

Exclusions: Vesicovaginal and urethrovaginal fistula that are the result of active new or recurrent cancer requiring further cancer treatment; patients with intestinal tract fistulae involving the bowel, whose care is covered by the NHS England specification A08/S/a Intestinal Failure; ongoing psychological support needs are outside the scope of this specification and will be met via the service asking the patient's GP to make an onward referral to local care providers; uretero vaginal fistulae, of which there are approximately four cases per year and are managed by urologists surgically through the abdomen or robotically by re-implanting the ureter and draining the kidney into the bladder, are outside the remit of this specification.

Multidisciplinary Team (MDT) Core membership:

- **Consultant Urologist or Urogynaecologist (MDT Lead)** with training & expertise in fistula management;
- **Consultant Urogynaecologist** (if Urologist above) or **Urologist** (if Urogynaecologist above);
- **Clinical Nurse Specialists (CNS)/Clinical Nurse Practitioners (CNP)** with an interest in fistula management (if appropriately trained/experienced can also carry out the duties of the Specialist Continence Nurse or Practitioner (SCN/SCP), the Stoma Nurse or Urinary Diversion Nurse,
- **Stoma Nurse** (unless the CNS/CNP has this experience and training);
- **Urinary Diversion Nurse** (unless the CNS/CNP has this experience and training);
- **Specialist Continence Nurses (SCN) / Specialist Continence Practitioners (SCP); Healthcare Assistants (HCA); Radiology** for interpretation of pre-operative imaging and post-operative cystogram (lead named person);

Access to: Physiotherapy (named person and available as required); **Coloproctology** (named person and available as required); **nutrition support** (dietetics), where bowel fistulae are managed in addition; **psychology** (as required).

2.2 Interdependence with other Services

Co-located services:

Urology,
Urogynaecology,
Coloproctology,
Nursing,
Nutrition,
Physiotherapy,
Radiology (Consultant).

Interdependent services: The service will also work with patient support groups, including involving them in guideline production and in the production of literature for patients.

Genito-Urinary Tract Patient Pathway

Diagnosis of Vaginal or Urethro fistula (Secondary >> Primary Care) (N=300)

Secondary care specialists refers to national centre (N=200) (with the remainder presumed not referred due to limited life expectancy, lack of fitness for surgery or patient's wish). Referrals may be from a GP or local MDT where complex co-morbidities are identified and specialised referral criteria met.

< 3 Weeks following the surgery/injury that resulted in the fistula, (Precipitating Surgery) (N=10); Catheterise and urgent Referral via Telephone ± Email, Follow-Up Referral Letter.

> 3 Weeks post-surgery /injury that caused the fistula Routine Referral Letter.

Decline referral if patient unfit for UVF or VVF surgery. (n=40)

If unfit for UVF or VVF repair but decision is made to undertake urinary diversion, this should be offered at the specialist centre in order to avoid unnecessary delay in the patient journey. (N=10).

Additional Investigations as appropriate (N=160); CTU/MRI Pelvis (Locally unless unavailable or scan of poor quality then at national centre), Community or Local Secondary Care Specialist Continence Nurse to review Management of Urine Leakage locally.

MDT review of referral letter and investigations (n=160), including anaesthetic.

Outpatient review at Centre (N=160): for

- i) Counselling;
- ii) Provision of/discussion on Patient Information Leaflet;
- iii) Take consent for treatment;
- iv) Give date for Definitive Repair surgery (N=150) of which a) 105 vaginal approach (70%), b) 45 abdominal approach if not suitable for fistula repair (30%), ± Preliminary Separate Cystoscopy/EUA in rare cases if Indicated;
- v) Or give date for Urinary Diversion (around 10) (5 ileal conduit and 5 neobladder)
- vi) CNS/CNP will review patient's management of urine leakage;
- vii) Patient Group ± Psychological Support Offered;
- viii) Date given for pre-operative assessment clinic (or may be same day as the clinic)

Patient admitted on day of surgery for Vaginal Repair or Abdominal Repair (laparoscopic/robotic or open) only if Vaginal Repair is NOT possible or if there is an absolute indication for Abdominal Repair

Telephone follow-up at one week

Outpatient clinic CNS review, including cystogram/methyl blue at three weeks after Surgery and Trial of Void if fistula has healed

Outpatient telephone clinic with Consultant and CNS/HCA at four months, Consultant telephone follow up at 12 months and unless problems, discharge back to GP if all is well.

3. Population Covered and Population Needs

3.1 Population Covered by this Specification

Women and adolescent girls aged 16 and above with a genito-urinary tract fistula. Patients under the age of 16 are unlikely to require this intervention, but if there is concern that a patient

under the age of 16 has VVF or UVF they should be referred to commissioned specialised Congenital Gynaecological Abnormalities or paediatric surgery/urology service providers for review.

The service outlined in this specification is for patients ordinarily resident in England* or otherwise the commissioning responsibility of the NHS in England (as defined in Who Pays?: Establishing the responsible commissioner and other Department of Health guidance relating to patients entitled to NHS care or exempt from charges).

* Note: for the purposes of commissioning health services, this EXCLUDES patients who, whilst resident in England, are registered with a GP Practice in Wales, but INCLUDES patients resident in Wales who are registered with a GP Practice in England.

3.2 Population Needs

A total of approximately 160 surgical interventions are now coded each year in England for a vesico-vaginal fistula or urethra vaginal fistula including a) surgical repairs (either an abdominal or vaginal approach), or b) a more invasive urinary diversion procedure.

3.3 Expected Significant Future Demographic Changes

No growth is expected in the total number of patients referred apart from that due to improved coding and identification of patients.

3.4 Evidence Base

The specification is based on the following clinical evidence: Review of Hospital Episode Statistics HES data: In 2014-2015 there were 97 surgical repairs (for 84 Vesico-Vaginal Fistula (VVF) and 13 Urethro-Vaginal Fistula (UVF) including abdominal and vaginal approaches. Urinary diversion procedures were in addition to this number. In multiple providers, the default position is to undertake the more invasive urinary diversion procedure ($289/1194 = 24\%$, Cromwell et al 2013), rather than the primary VVF repair even though a urinary diversion has greater morbidity and significant adverse long term impacts on the patient's quality of life, Cromwell, D., Hilton, P., 2013. There is also a correlation in the likelihood of the more invasive abdominal VVF repair surgery being performed in low volume centres and such centres have a median of eight days length of stay, Cromwell, D., Hilton, P. 2013. There is also a correlation between the likelihood of the less invasive vaginal (VVF) repair being undertaken in centres with higher volumes due to the surgeons there being more experienced in this procedure, Cromwell D, Hilton, P 2013. There is also evidence that high volume VVF centres have half the failure rate of lower volume centres and are far more likely to repair a fistula successfully than perform a urinary diversion such as an ileal conduit or other form of urinary diversion, Cromwell D, Hilton 2013. Five per cent of women with VVF will have associated upper tract problems such as ureteric obstruction or uretero-vaginal fistula, Goodwin, W.E, Scardino, P.T 1980, Akman, R.Y, Sargin, S, Ozdemir, G. et al 1999. A review of fistula surgery and outcomes in the UK from 2000 to 2009 (Cromwell D, Hilton 2013) showed that only three surgical teams in England were performing more than three fistula repairs annually, and that the revision rates for failure in these 'larger' volume units are half those in other units.

The aetiology and incidence of urogenital tract fistulas vary geographically. In the United States and other developed countries, these are uncommon, are most often the result of gynaecological surgery and less often as a result of obstetric injury, severe pelvic pathology or radiation therapy Tancer ML 1992. In developed countries, patients with successfully repaired bladder and ureteral fistulas usually have no residual problems.

4. Outcomes and Applicable Quality Standards

4.1 Quality Statement – Aim of Service

The aim of the service is to provide high quality assessment, diagnostics, care planning and surgical intervention where appropriate for women with a genito-urinary tract fistula. The service will provide continuity of expert care across the care pathway and will involve other specialists identified in this specification as appropriate.

NHS Outcomes Framework Domains

Domain 1	Preventing people from dying prematurely	N
Domain 2	Enhancing quality of life for people with long-term conditions	N
Domain 3	Helping people to recover from episodes of ill-health or following injury	Y
Domain 4	Ensuring people have a positive experience of care	Y
Domain 5	Treating and caring for people in safe environment and protecting them from avoidable harm	Y

4.2 Indicators Include:

Number	Indicator	Data Source	Outcome Framework Domain	CQC Key question
Clinical Outcomes				
101	Number of new patient referrals	Provider submitted	3	effective
102	% patients having vaginal repair	Provider submitted	3	effective
103	% of patients having a vaginal repair discharged within five days.	Provider submitted	3	effective
b104	% of patients having an abdominal surgery discharged within ten days.	Provider submitted	3	effective
105	% patients that return to theatre within 30 days	Provider submitted	3	effective
106	% patients having urinary diversion surgery	Provider submitted	3	effective
107	% patients with anatomical closure at 1 year post surgery (none radiotherapy (RT))	Provider submitted	3	effective

108	% patients with anatomical closure and continence at 3 years post-surgery (none RT)	Provider submitted	3	effective
109	% patients with RT related fistula with anatomical closure at 1 year post surgery	Provider submitted	3	effective
110	% patients with RT related fistula with anatomical closure and continence at 3 years post- surgery	Provider submitted	3	effective
111	% patients discussed at MDT	Provider submitted	3	effective
112	% patients with a post-operative wound infection within one week of surgery whilst an inpatient	Provider submitted	3	effective
Patient Experience				
201	There is information for patients and carers	self -declaration	3,4	caring responsive
202	The service is collecting patient reported outcomes	Self- declaration	3,4	caring responsive
203	The service is collecting feedback from patients	self -declaration	3,4	caring responsive
Structure and Process				
001	There is a specialist team	Self- declaration	3,5,	effective, safe
002	There are monthly MDT treatment planning meetings	Self- declaration	3,5	effective, safe
003	Patients are seen in a one stop clinic	Self- declaration	3,5	effective, safe
004	There are patient pathways in place	Self -declaration	3, 4 ,5	effective, safe
005	There are clinical guidelines in place	Self- declaration	3,5	effective, safe

See also Schedule 6 of the NHS Standard contract.

4.3 Commissioned providers are required to participate in annual quality assurance and collect and submit data to support the assessment of compliance with the service specification as set out in Schedule 4A-C

There is a requirement to hold national audit meetings involving all specialist centres meeting together on an annual basis. Audit meetings should address: clinical performance and outcomes including surgical and non-surgical outcomes; process-related indicators, such as efficiency of the assessment process; prescribing policy, bed provision and occupancy, outpatient follow-up; stakeholder satisfaction, including feedback.

4.4 Applicable CQUIN goals are set out in Schedule 4D

5. Applicable Service Standards

5.1 Applicable Obligatory National Standards

There are no applicable obligatory national standards.

5.2 Other Applicable National Standards to be met by Commissioned Providers

Maintenance of skill requires regular and consistent involvement in the management of a range of gynaecological and urological conditions, with a minimum of three and optimally 10 cases of lower urinary tract fistula per year. Hilary CJ et al 2016. British Association of Urological Surgeons (BAUS) information leaflets are available for providers to share with patients:

<https://www.baus.org.uk/userfiles/pages/files/Patients/Leaflets/Vaginal%20fistula%20abdominal.pdf>

<https://www.baus.org.uk/userfiles/pages/files/Patients/Leaflets/Vaginal%20fistula%20vaginal.pdf>

5.3 Other Applicable Local Standards

The service's specialist centres must ensure they are fully integrated into their Trust's corporate and clinical governance arrangements and comply fully with clinical negligence scheme for trusts (CNST) and Care Quality Commission (CQC) requirements in terms of quality and governance.

6. Designated Providers (if applicable)

A small number of centres (up to five) to provide the service for the whole of England, located geographically, with each covering a population of approximately 15 million people and performing between 30 to 50 repairs per annum.

7. Abbreviation and Acronyms Explained

The following abbreviations and acronyms have been used in this document:

CNS/CNP	Clinical Nurse Specialist/Clinical Nurse Practitioner
CTU	Computerised Tomography Urogram
Cystogram	Also known as cysto-urethrogram.
Cystoscopy	A cystoscope is a thin tube with a camera and light on the end. During a cystoscopy, a doctor inserts this tube through the urethra (the tube that carries urine out of your bladder) and into the bladder so they can visualize the inside of the bladder
ECG	Electrocardiogram
ECHO	Echocardiogram
EUA	Examination under anaesthetic
Fistula	An abnormal or surgically made passage between an organ and the body surface, or between two organs. (Plural – fistulae)
GP	General Practitioner
GUT	Genito-Urinary Tract
HCA	Healthcare Assistant
HES	Hospital Episode Statistics
IIQ7	Incontinence impact questionnaire
Ileal conduit	A type of urinary diversion procedure
ISC	Intermittent self-catheterisation
MDT	Multi-Disciplinary Team
MRI	Magnetic Resonance Imaging
Neobladder	A type of urinary diversion procedure
PISQ12	Pelvic organ prolapse/urinary Incontinence Sexual function Questionnaire
PFT	Pulmonary Function Tests
Post precipitating surgery	The precipitating surgery is the original surgery or treatment which caused the fistulae. After this, (post) the repair surgery will take place if there is potential benefit to the patient
SCN/SCP	Specialist Continence Nurse or Specialist Continence Practitioner
UDI6	Urogenital distress inventory 6
UVF	Urethro-vaginal fistula
VVF	Vesico-vaginal fistula

References:

- Akman, R.Y., Sargin, S., Ozdemir, G. Yazicioglu, A. Cetin, S., (1999). Vesicovaginal and ureterovaginal fistulas: a review of 39 cases. *Int Urol Nephrol*, 31:321.
- Beardmore-Gray, A., Pakzad, M.H., Hamid, R., Ockrim, J.L., Greenwell, T.J., (2016). Does the Goh Classification predict the outcome of VVF Repair in the Developed World? *IUJO* 2017; 28 (8): 937-940. PMID: 27822888 Sept 2016.
- Goodwin, W.E., Scardino, P.T., (1980) Vesico-vaginal and ureterovaginal fistulas: A Summary of 25 years of experience, *J Urology* 123:370, 1980
- Greenwell, T.J., Ockrim, J.L., (2016). Understanding Surgical Management of Urinary Tract-Vaginal Fistula. Module for BJUI Knowledge 2014. <https://app.tessello.co.uk/BJUI/#/category/1542/female-urology>
- Hillary, C.J., Osman, N.I., Hilton, P., Chapple, C.R., (2016). The Aetiology, Treatment, and Outcome of Urogenital Fistulae Managed in Well- and Low-resourced Countries: A Systematic Review. *Eur Urol.* 2016 Sep;70(3):478-92. doi: 10.1016/j.eururo.2016.02.015. Review.
- Kiosoglous, A.J., Greenwell, T.J., (2015). Vesico-Vaginal and Urethro-Vaginal Fistulae in the Developed World. *JCU* 2015; 8: 233-239
- Hilton, P., (2012) Urogenital fistula in the UK: a personal case series managed over 25 years. *BJU Int.* 2012 Jul;110 (1):102-10. doi: 10.1111/j.1464-410X.2011.10630x.
- Hilton, P., Cromwell, D.A., (2012). The risk of vesicovaginal and urethrovaginal fistula after hysterectomy performed in the English National Health Service--a retrospective cohort study examining patterns of care between 2000 and 2008. *Hilton BJOG* Nov;119(12):1447-54. doi: 10.1111/j.1471-0528.2012.03474.x.
- Cromwell, D., Hilton, P., (2012). Retrospective cohort study on patterns of care and outcomes of surgical treatment for lower urinary-genital tract fistula among English National Health Service hospitals between 2000 and 2009. *BJU Int.* 2013 Apr;111(4 Pt B):E257-62. doi: 10.1111/j.1464-410X.2012.11483.x.
- Ockrim, J.L., Greenwell, T.J., Foley, C.L., Wood, D.N., Shah, P.J., (2009): A tertiary experience of vesico-vaginal and urethro-vaginal fistula repair: factors predicting success. *BJU Int.* Apr;103(8):1122-6. doi: 10.1111/j.1464-410X.2008.08237.x
- Dolan, L.M., Dixon, W.E., Hilton, P., (2008) Urinary symptoms and quality of life in women following urogenital fistula repair: a long-term follow-up study. *BJOG.* Nov;115(12):1570-4. doi: 10.1111/j.1471-0528.2008.01927.x
- Hilton, P (2002) In: Maclean, A., Cardozo, L., Urogenital Fistulae. editors. *Incontinence in Women - proceedings of the 42nd RCOG Study Group.* London: RCOG; 2002. p.163-81.
- Abrams, P. editor (2012). *International Consultations on Urological Diseases. First ICUD-SIU International Consultation on Obstetric Vesico-Vaginal Fistula.* Plymouth, UK: Health Publications
- deRidder, D., Hilton, P., Mourad, S., Pickard, R.S., Rovner, E.S. and Stanford, E., (2012) In: Abrams, P., Cardozo, L.D., Wein, A., editors. *Incontinence – ICUD- EUA 5th International Consultation on Incontinence.* Plymouth, UK: Health Publications.
- Tancer, M.L. (1992) Observations on prevention and management of vesicovaginal fistula after total hysterectomy. *Surg Gynecol Obstet* 1992; 175:501.
- International Society of Obstetric Fistula Surgeons. Standards. (2012) <http://www.isofs.org/standards>.
- International Federation of Gynecology & Obstetrics and Partners. (2011) *Global competency based obstetric fistula training manual.* London: FIGO; http://www.figo.org/files/figo-corp/FIGO_Global_Competency

- Wall, L.L., Karshima, J.A., Kirschner, C. and Arrowsmith, S.D. (2004). The obstetric vesicovaginal fistula: characteristics of 899 patients from Jos, Nigeria. *Am J Obstet Gynecol* 190:1011.
- Wall, L.L., (2006). Obstetric vesicovaginal fistula as an international public-health problem. *Lancet* 368:1201