

## Protocols for Screening, Prevention and Management of Blood Borne Virus in renal patients under the care of UHBFT, Renal Services 2<sup>nd</sup> Edition

**CONTROLLED DOCUMENT**

<b>CATEGORY:</b>	Protocol Document
<b>CLASSIFICATION:</b>	Clinical
<b>PURPOSE</b>	These protocols support and provide guidance for registered nurses and medical staff working within the renal specialty who perform blood borne virus (BBV) screening and manage patients requiring pre-dialysis, haemodialysis or peritoneal dialysis treatment. NB. They accompany the Clinical Procedure for Screening, Prevention and Management of Blood Borne Virus in Patients Under the Care of UHB Renal Service. 2 <sup>nd</sup> Edition.
<b>Controlled Document Number:</b>	715
<b>Version Number:</b>	5
<b>Controlled Document Sponsor:</b>	Medical Director, Division B Associate Director of Nursing, Division B
<b>Controlled Document Lead:</b>	Matron for Established Renal Failure
<b>Approved By:</b>	Executive Medical Director Executive Chief Nurse Associate Director of Nursing Division B Lead Consultant for BBV Renal Services Matron for Established Renal Failure
<b>On:</b>	September 2014
<b>Review Date:</b>	August 2018
<b>Distribution:</b>	
• <b>Essential Reading for:</b>	The registered nurses and medical staff who perform blood borne virus screening and care for patients with a blood borne virus under the care of UHBFT renal service
• <b>Information for:</b>	All clinical staff working in the renal specialty.

## **Protocols For Screening, Prevention and Management of Blood Borne Virus in renal patients under the care of UHBFT, Renal Services 2<sup>nd</sup> Edition**

This protocol contains the appendices linked to the Clinical Procedure for Screening, Prevention and Management of Blood Borne Virus in Patients under the Care of UHBFT Renal Service.

### Contents:

		<b>Page</b>
<b>1</b>	<b>Roles and Responsibilities in Blood Borne Virus Screening</b>	<b>3</b>
<b>2</b>	<b>Hepatitis B Vaccinating</b>	<b>4</b>
<b>Appendix 1</b>	<b>Renal Dialysis Blood-Borne Virus Screening Protocol</b>	<b>6</b>
<b>2</b>	<b>Blood Borne Virus Screening Regime</b>	<b>7</b>
<b>3</b>	<b>BBV Management of Patients Starting Haemodialysis</b>	<b>8</b>
<b>4</b>	<b>Management and Surveillance of Patients Returning from Dialysis (or visiting) Outside the UK</b>	<b>9</b>
<b>5</b>	<b>Holiday Returner Flow Chart</b>	<b>10</b>
<b>6</b>	<b>Patients Dialysis Machine Requires Temporary Isolation</b>	<b>11</b>
<b>7</b>	<b>Patients Dialysis Machine is Classified as Permanent Isolation</b>	<b>12</b>
<b>8a</b>	<b>Labelling dialysis machines for the sole use of</b>	<b>14</b>
<b>8b</b>	<b>For the sole use of machine - form</b>	<b>15</b>
<b>8c</b>	<b>Machine isolation / deisolation log book</b>	<b>16</b>
<b>9</b>	<b>Blood Borne Virus Status is out of date</b>	<b>17</b>

## 1. Roles and Responsibilities in Blood Borne Virus Screening

The roles and responsibilities of:

- Pre-dialysis and Kidney Transplant Practitioners
- Peritoneal Dialysis Practitioners
- On-call Renal Doctor/Medical Team
- Dialysis Practitioners

in planned and unplanned starts onto haemodialysis and other extra corporeal therapies.

Blood results for BBV processed by UHBFT laboratories is the standard result when deciding how to treat patients. If a result from another hospital or health care provider is positive and UHBFT is negative or there is no current UHBFT result, the patient and machine must be isolated using a “for sole use only machine”. If the repeat sample is then negative this must be discussed with the Matron for ERF and BBV Chair lead and a risk assessment performed to decide how and where the patient is to be treated.

### **Roles & Responsibilities of staff managing starts to Haemodialysis and other extra corporeal therapies if patient is known to UHB renal services**

#### **Pre- Dialysis & Transplant Practitioners**

- All known patients with a glomerular filtration rate (eGFR) of 15ml/min are regularly screened for BBV
- BBVs to be sampled every 3 calendar months (HBV, HCV Ab) and annual (HIV).
- Patients are vaccinated for Hepatitis B where indicated and titre levels monitored. (Ideally a gap of at least one week is required between vaccination and sampling for BBV and the blood form must state the date of the last administered vaccination)

#### **Peritoneal Dialysis Practitioners:**

- Three calendar month screening of all patients on PD (HBsAg, HCV Ab) and annual(HIV)
- All patients with deteriorating peritoneal function where a planned transfer to HD must have up to date BBV status

#### **Haemodialysis Practitioners**

- Ensure on first dialysis session (or other extra corporeal treatment) that the patient's BBV status is confirmed, documented and result is within last 3 calendar months. If there are any concerns that patient could have been exposed to BBV during this time period then this should be repeated as per 'unknown' patients.

- When BBV bloods are not within 3 calendar months or unknown status, re-sample bloods must be taken on the 1<sup>st</sup> dialysis (HBsAg, HBcAb, HCV Ab, HIV)
- If status is unknown – patient must be isolated and treated on a ‘named for their sole use machine’, until a negative status is known. For positive BBV patients – treat according to BBV type status
- BBV status is checked and documented at each treatment for acute patients and weekly for regular chronic patients.
- Patient’s transferring to satellite dialysis unit require BBV (HBV, HCV Ab) to be within 4 weeks and HIV within last year.
- Patients dialysing at home require 3 calendar months BBV (HBV, HCV Ab) and annual HIV testing.

**Roles & Responsibilities of staff managing starts to Haemodialysis and other extra corporeal therapies if patient is unknown to UHB renal services**

**On-call Medical / Renal Team**

- All patients presenting unknown to UHB renal services will need urgent BBV screen on or ideally prior to their first dialysis treatment (ie HBsAg, HBcAb, anti-HBs, HCV Ab and HIV). Until these results are available the patient must be isolated and treated on a “named for their sole use only” machine, until a negative status is known.
- All patients new to dialysis with BBV screen results within three months, but there is a risk they may have travelled overseas for treatment, must have BBV results within 4 weeks
- All patients stepping down from intensive care requiring dialysis or other extra corporeal therapy should have urgent HBsAg, HBcAb, anti-HBs, HCV Ab and HIV requested ahead of transfer to the renal programme to minimise need for named for sole use machines
- If performed during current admission but prior to requiring dialysis, BBV bloods sampled must be within 4 weeks to be considered in-date.
- Once full BBV status is known, patients should be treated as per protocols.

**2. Hepatitis B Immunisation**

Because of the increased risk of exposure to Hepatitis B in haemodialysis patients, it is recommended that all patients who require renal replacement therapy (RRT) – (dialysis and transplantation) should be immunised against Hepatitis B Virus (HBV) (Renal Association, 2009).

HBV immunisation of renal patients should occur prior to commencement of dialysis where at all possible.

Patients who are at high risk for previous HBV infection should be known to have undetectable anti HB core antibody (HBcAb) before administering an immunisation schedule.

The initial HBV immunisation schedule in patients with Stage 4-5 CKD and those on dialysis treatment is:

- HBvaxPRO 40mcg at 0, 1 and 6 months.
- On occasions, when this vaccine is not available, the UHBFT BBV committee will decide on a suitable alternative and ensure that it is distributed with appropriate staff education.

Vaccines are licensed for intramuscular route of administration.

Patients should be regarded as a 'responder' if anti HBs antibody titre is >10U/L 8 weeks after completing immunisation.

Responders to HBV immunisation (as described in above) should receive a further booster dose if the annual anti HBs titre is <100U/L.

Nurses undertaking vaccination administration to patients, must complete a Trust approved vaccination training and competency.

Refer to UHBFT Guideline for the Administration of Hepatitis B Vaccination to Renal Patients, for further instructions in protecting and administering patients by the use of immunisation.

**Appendix 1**

**RENAL DIALYSIS BLOOD-BORNE VIRUS SCREENING PROTOCOL**

* Monthly = calendar month	HBsAg	HBcAb	Anti HBs	HCV Ab	HCV RNA	HIV 1+2 Ab
On initial presentation of patient (1 <sup>st</sup> ever HD / or other treatments)	✓	✓	✓	✓		✓
Patient with HBcAb positive (core antibody positive)	✓ Monthly *					
Established dialysis (HD & PD) patient low clearance or failing transplant patient with GFR < 15ml/min	✓ 3 Monthly *	✓ 3 Monthly *	✓ Annually	✓ 3 Monthly* if negative on initial testing		✓ Annually if negative on initial testing
Before going to 'dialysis away from base' (Pre-Holiday Screen)	✓	✓	✓	✓		✓*
Pre-transplantation listing	✓			✓		✓
Pre-vaccination screen	✓	✓	✓	✓		✓
Post-vaccination Screen (8 weeks)			✓			
Post return from dialysis in 'High Risk Area'	✓ On return and every 2 weeks for 13 weeks)	✓ On return and at week 13	✓	✓ On return and at week 13	✓ On return and 2 weeks for 13 weeks	✓ On return and at week 13
Post return from dialysis in 'Low Risk Area'	✓	✓		✓		

\*\* If required for travel / holiday – please indicate on request.

**MRSA screening is also necessary on all patients returning from any holiday (or dialysis away from their home base, and when patients dialyse at a satellite unit for the first time)** Also refer to Appendix 2.

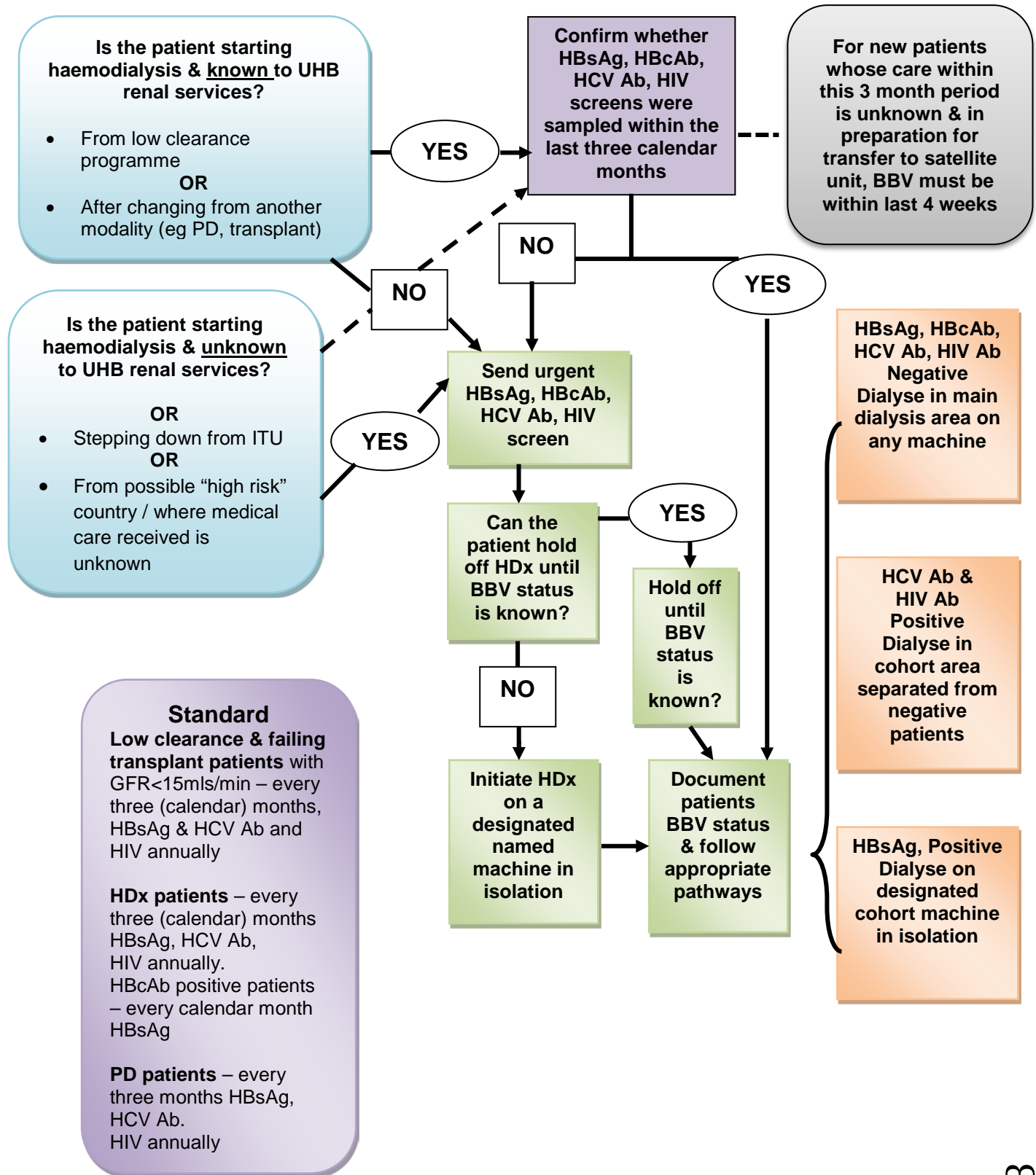
**Appendix 2**

**BLOOD-BORNE VIRUS SCREENING REGIME**

INVESTIGATION	TIME PERIOD	NOTES
Hepatitis B surface antigen (HBsAg)	<ul style="list-style-type: none"> <li>On initial presentation of patient to determine status</li> <li>Every 3 calendar months</li> <li>Pre renal transplantation listing</li> <li>Post return from dialysis in 'High Risk Area' -<b>Every 2 weeks for 13 weeks</b></li> <li><b>Monthly (calendar)</b> if Hepatitis B Core antibody positive.</li> </ul>	<b>Negative = NO</b> evidence of hepatitis B infection <b>Positive = EVIDENCE</b> of current Hepatitis B infection (send to reference laboratory for confirmation and inform consultant Nephrologist overseeing unit immediately) <b>Equivocal</b> (sent to reference laboratory for confirmation). <b>Unconfirmed</b> result from reference laboratory = <b>FALSE POSITIVE</b> .
Hepatitis B Core antibody (HBcAb)	<ul style="list-style-type: none"> <li>On initial presentation of patient to determine status</li> <li>Pre-vaccination to determine history</li> <li>At laboratory discretion</li> </ul>	<b>Negative = NO</b> evidence of current or past Hepatitis B infection <b>Positive = PAST</b> infection (if HBsAg is negative) or <b>CURRENT</b> Hepatitis B infection (if HBsAg is positive)
Hepatitis B surface antibody (AntiHBs)  (Hep B Titre levels)	<ul style="list-style-type: none"> <li>On initial presentation of patient to determine history</li> <li>Pre-vaccination</li> <li>Post vaccination (8 weeks after final dose of vaccine)</li> </ul>	<b>&lt;10 mIU/L</b> non immune/no response to vaccine <b>10-100 mIU/L</b> immune (post vaccination, or natural immunity) <b>&gt;100 mIU/L</b> immune (post vaccination, or natural immunity)
Hepatitis C antibody (HCV Ab)	<ul style="list-style-type: none"> <li>On initial presentation of patient to determine history</li> <li>Every 3 calendar months if negative on initial testing</li> <li>Pre renal transplantation listing</li> <li>Post return from High Risk Area</li> </ul>	<b>Positive = PAST OR CURRENT</b> infection (sent to reference laboratory for confirmation and inform consultant Nephrologist immediately if not previously positive).
Hepatitis C RNA (HCV RNA)	<ul style="list-style-type: none"> <li>Post return from dialysis in 'High Risk Area' -<b>Every 2 weeks for 13 weeks</b></li> </ul>	This is a quantitative test indicating the severity of the infection and viral load. In acute infections where HCV Ab is still negative, only the viral load indicates true infection status.
Human immunodeficiency virus (HIV) antibody	<ul style="list-style-type: none"> <li>On initial presentation of patient to determine history</li> <li>Annual - if negative on initial testing</li> <li>Pre renal transplantation listing</li> <li>Post return from high risk area</li> </ul>	<b>Positive=</b> Evidence of <b>CURRENT</b> infection (sample sent to reference laboratory for confirmation and inform consultant Nephrologist immediately if not known positive)



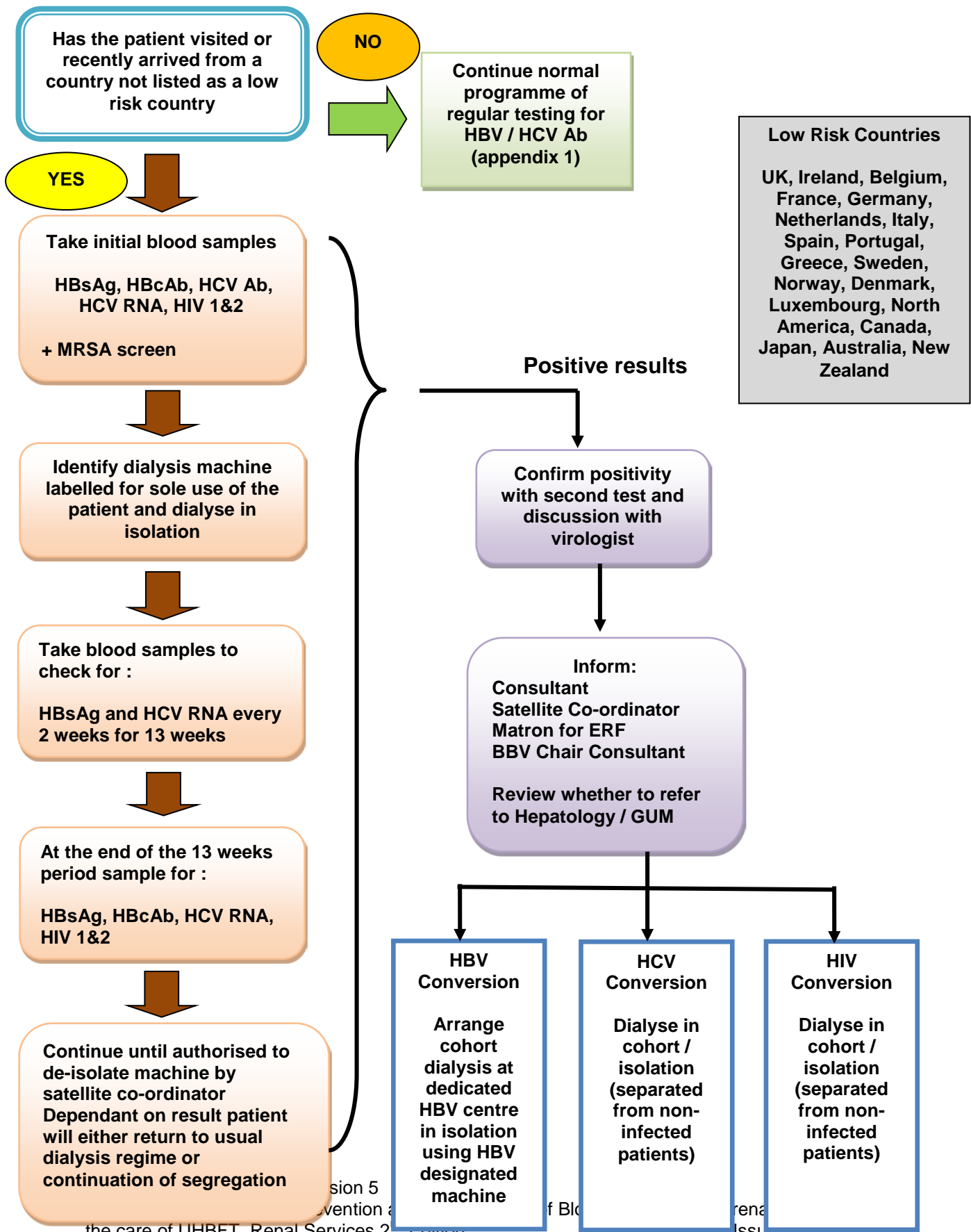
## BBV Management of Patients Starting Haemodialysis (and other extracorporeal treatments)





Appendix 4

**Management and Surveillance of Patients Returning from Dialysis  
(or visiting) Outside the UK**



Appendix 5

**HOLIDAY RETURNER FLOW CHART**

Patient name.

Please indicate HOLIDAY RETURNER on the form

	Date sent	Date Checked	Bloods required				
Patient returned from holiday							
Patients first dialysis since return (week 1)			<table border="1"> <tr> <td>HBsAg, HBcAb, Anti-HBs, HIV 1&amp;2</td> <td>Red top</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg, HBcAb, Anti-HBs, HIV 1&2	Red top	HCV RNA	Purple
HBsAg, HBcAb, Anti-HBs, HIV 1&2	Red top						
HCV RNA	Purple						
1 <sup>st</sup> screen at week 3			<table border="1"> <tr> <td>HBsAg</td> <td>Red</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg	Red	HCV RNA	Purple
HBsAg	Red						
HCV RNA	Purple						
2 <sup>nd</sup> screen at week 5			<table border="1"> <tr> <td>HBsAg</td> <td>Red</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg	Red	HCV RNA	Purple
HBsAg	Red						
HCV RNA	Purple						
3 <sup>rd</sup> screen at week 7			<table border="1"> <tr> <td>HBsAg</td> <td>Red</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg	Red	HCV RNA	Purple
HBsAg	Red						
HCV RNA	Purple						
4 <sup>th</sup> screen at week 9			<table border="1"> <tr> <td>HBsAg</td> <td>Red</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg	Red	HCV RNA	Purple
HBsAg	Red						
HCV RNA	Purple						
5 <sup>th</sup> screen at week 11			<table border="1"> <tr> <td>HBsAg</td> <td>Red</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg	Red	HCV RNA	Purple
HBsAg	Red						
HCV RNA	Purple						
6 <sup>th</sup> screen at week 13			<table border="1"> <tr> <td>HBsAg, HBcAb, anti HBs, HIV 1&amp;2</td> <td>Red top</td> </tr> <tr> <td>HCV RNA</td> <td>Purple</td> </tr> </table>	HBsAg, HBcAb, anti HBs, HIV 1&2	Red top	HCV RNA	Purple
HBsAg, HBcAb, anti HBs, HIV 1&2	Red top						
HCV RNA	Purple						
Date patient due for de-isolation Authorised by Satellite Co-ordinator							

Actual date de-isolated		
-------------------------	--	--

## **Patient's Dialysis Machine Requires Temporary Isolation**

### **Machine Isolation**

**How to prepare a temporary dialysis machine for the sole use of a patient:**

<b>How?</b>	<b>Who is responsible?</b>
Yellow laminated high risk label is securely attached to the drip stand of the machine, showing the patient ID number and date. Second smaller yellow label stating Isolated Machine is attached to dialysate tubing (appendix 8a)	Nursing staff
The patient's details are recorded in the Machine Isolation Book (appendix 8c) and or electronic data system	Nursing staff

### **Machine De-isolation**

**How to de-isolate the machine of a patient that is found to have negative status, or a HCV positive or HIV positive patient when the machine can return to regular use:**

<b>How?</b>	<b>Where ?</b>	<b>Who is responsible?</b>
Last use before de-isolation, internal machine is heat citric disinfected	At the point of use	Nursing staff
Externals of the machine are cleaned as per protocol	At the point of use	Nursing staff
Labels completed with de-isolation details and removed by the de-isolation nurse and technician and logged in the Machine Isolation Book (appendix 8c)	Machine Room / Area	Renal technician with nursing staff

**Appendix 7**

**Patients Dialysis Machine is Classified as Permanent Isolation**

**Machine Isolation**

**How to prepare a permanent machine for the sole use only for individual patients or positive cohorts such as HBV:**

<b>How?</b>	<b>Who is Responsible?</b>
Yellow Laminated high risk label is securely attached to the drip stand of the machine, showing the patient ID number and date. (UHB - the technician tags the machine) (appendix 8a)	Nursing staff
Complete the request for Sole Use Machine Form and inform the Renal Technician (appendix 8b)	Nursing staff
Machine is labelled with the use of biohazard tape showing the patient's ID number and machine number	Renal Technician and Nursing staff
Patient's details are recorded in the Machine Isolation Book under Permanent Isolated Machines (appendix 8c)	Nursing staff (and or local policy arrangements)

**Machine De-isolation**

**How to De-isolate a machine used on a positive hepatitis B patient, or a machine that has been classed as 'permanently isolated', but that can return for general use:**

<b>How?</b>	<b>Where ?</b>	<b>Who is responsible?</b>
Last use before de-isolation- internal machine is heat citric disinfected	At the point of use	Nursing staff
Externals of the machine are cleaned with haz tab solution 10,000ppm	At the point of use	Nursing staff
De-isolation is logged in the Machine Isolation Book (appendix 8c)	Machine room / area	Renal technician and Band 7 Sister
De-isolation document is completed and filed. Green medical device decontamination certificate is completed asking for internal cleaning. Write on green label registration number, machine number and signature and adhere to front of the machine (UHB only, or local decontamination form / label)	Machine room / area	Renal technician and Band 7 Sister
Machine internals are re-disinfected with heat citric for a second time and Sporitol disinfected	Renal technicians workshop	Renal technicians
Venous transducer is replaced with	Renal technicians	Renal technicians

new	workshop	
Dialysate tubing is replaced with new	Renal technicians workshop	Renal technicians
Hanson connectors are disinfected / soaked in bleach	Renal technicians workshop	Renal technicians
Externals of machine are thoroughly deep cleaned with Haz tabs solution 10,000ppm	Renal technicians workshop	Renal technicians
Remove all labels. Medical devices decontamination certificate is retained in technicians log book	Renal technicians workshop	Renal technician

Appendix 8a

**Labels to be tagged to isolated machine for the sole use of:  
(Yellow paper and laminated)**

Attach with tie tag to drip stand above screen, securely so the label cannot be removed

(front of record – A4 size)

Temporary Isolated Machine	
Patient hospital number	Date of birth
Date BBV sent	Machine isolated by
Isolation reason / comments	Machine number

(back of the above front record)

Machine De-isolation Request		
Date		
Reason		
Nurse		
Technician	Date	Time
De-isolation to be signed by Nurse and Technician and filed with technical job sheet records		

(dialysate tubing tag). Tie securely to each dialysate tubes just below Hansen connectors

**ISOLATED  
MACHINE**



## Sole Use Machine Form

Complete at beginning of the process, store and complete on de-isolation also. Store with above tags (as evidence of the process) and record in details in Isolation and de-isolation machine log below

Renal Technical Services				
Request for Sole Use Machine				
Name		Patient Sticker		
Unit Number				
Reason for Machine Isolation				
Reason	Isolation Time			
Holiday returner from High risk area	3 months			
Other BBV				
High risk patient				
Machine Isolation Authorisation by Registered Nurse				
Date	Nurse Signature	Print Name		
Machine Isolation by Renal Technician				
Date	Machine Make	Machine number	Technician Signature	Print Name
Machine De-isolation				
Machine De-Isolation Authorised by Band 7 Nurse or Consultant ONLY Holiday returner Bloods checked after 3 month period				
Blood Result	Date Taken	Date Negative		
HBsAg				
HCV RNA				
HIV				
De- isolation Other Reason				
Reason	Date			
Date	Band 7 Signature	Print Name		
Date	Technicians Signature	Print Name		

1

ASMP 15<sup>th</sup> January 2011

Appendix 8c

Machine Isolation / De-isolation Log Book Details

Machine isolation details							De-isolation details			
Patient name	Hospital number	Date of birth	Dialysis unit	Machine number	Isolation reason	Sign / nurse	Date patient de-isolated	Date machine de-isolated	De-isolation action	Sign / nurse / tech

**Appendix 9**

## Blood Borne Virus Status is out of date

In the chronic haemodialysis programme, when a patient's BBV status is either unknown or out of date, unnecessary risk is created for both staff and the rest of the dialysis patient population.

Within the chronic haemodialysis programme, routine BBV monitoring occurs as follows:

	HBsAg	HBcAb	Anti HBs	HCV Ab	HIV 1+2 Ab
On initial presentation of patient (or within month before commencing dialysis)	✓	✓	✓	✓	✓
Patient HBcAb positive (core antibody positive)	✓ monthly				
Established haemodialysis patient	✓ 3 monthly	✓ 3 monthly	✓ 12 monthly	✓ 3 monthly if negative on initial testing	✓ Once yearly if negative on initial testing

For a chronic haemodialysis patient, blood borne virus (BBV) blood tests are classed as being out of date is when:

1. An established HD patient, who is not HBcAb positive, does not have blood results from within the time period indicated a above; ie 3 monthly for HBsAg and HCV Ab or 12 monthly for HIV Ab.
2. An established HD patient who is HBcAb positive, is as above for HCV and HIV Ab or has not had HBsAg tested within one calendar month.

### **Actions:**

1. Prepare dialysis machine for sole use / named patient only and dialyse safely according to already known previous infectious status ( eg if already HIV positive but HCV and HBV are out of date)
2. Re sample all BBV bloods
3. Continue to dialyse on machine for sole use only until new results return.
4. Document as a treatment variance and complete appropriate incident report.

5. Explain to the patient why they are dialysing on a sole use machine, and the implications this may have as to when and where they dialyse until the re test results return
6. Ensure prompt follow up of blood serology and action as per BBV policy and protocols.
7. Report out of date bloods to the Satellite Liaison Team and Matron ERF and ward 301 acutes Queen Elizabeth Hospital if the incidents occurs between any Friday after 1600 hours and Tuesday 0800 hours. *(On Good Friday bank holiday, or any other Bank Holiday which falls towards the end or beginning of the week, inform ward 301 any time from Thursday evening)*
8. Report as a dialysis incident

**Protocols prepared by:**

Liz Simpson  
Clara Day

Matron, Established Renal Failure  
Nephrology Consultant

**Protocols submitted to and approved by:**

Executive Medical Director



Date:

29/9/14

Executive Chief Nurse



Date:

24/09/2014

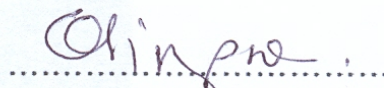
Associate Director of Nursing, Division B



Date:

16/9/14

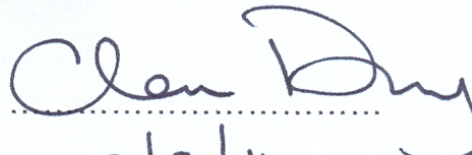
Matron for Established Renal Failure



Date:

18/9/14

Lead Consultant for BBV Renal Services



Date:

18/9/14