

**Participant Information Sheet**

**Developing and testing a Clinical Decision Support application to prompt blood-borne virus testing, Part 1**

**PURPOSE OF THE STUDY**

The aim of the project is to investigate what type of electronic patient record (EPR) alert, indicating that a patient attending a GP surgery is at higher risk of blood-borne virus (BBV) infection, is most effective in prompting clinicians to order BBV tests. The 3 BBVs are HIV, hepatitis B and hepatitis C. Significant proportions of patients with these infections are undiagnosed and present late with higher morbidity and mortality. BBV\_TP1 is a software application designed to identify patients at higher risk of BBV infections who have not been tested for BBVs.

**WHAT DO I NEED TO DO?**

You will be asked to fill in an online survey in SurveyMonkey. This will take between 15-20 minutes and will provide 10 short patient scenarios after which you will be asked whether you would test the patient for BBVs. You will also be asked to answer a few further questions on BBV testing.

**ARE THERE ANY RISKS IN PARTICIPATING?**

It is expected that participating in this project will not cause any significant stress or emotional discomfort. This project and questionnaire have been reviewed by the Teesside University ethics committee.

**CONFIDENTIALITY**

Participation will be anonymous. You will not be asked to record your name for the purpose of the study; however, we will ask for information on your age, gender, profession and place of work

**FREEDOM TO REFUSE OR WITHDRAW**

Participation in all aspects of this project is entirely voluntary. You may withdraw from the study at any point whilst or after completing the questionnaires, and you can withdraw the information you provide within four weeks after taking part. If you wish to withdraw from the study, please contact either of the lead researchers (Professor Paul van Schaik or Dr David Chadwick).

**WHO DO I CONTACT IF I HAVE ANY QUESTIONS?**

If you have any questions relating to the project, please contact either of the

lead researchers for this project:

Professor Paul van Schaik, Professor of Psychology, School of Social Sciences, Business and Law, Teesside University. P.Van-Schaik@tees.ac.uk

Dr David Chadwick, Consultant in Infectious Diseases, The James Cook University Hospital, Middlesbrough TS4 3BW. Davidr.chadwick@nhs.net.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.



Improving blood-borne virus (BBV) testing in primary care

## Consent to the Survey

Developing and testing a Clinical Decision Support application to prompt blood-borne virus testing, Part 1

1. I have read and understood the 'Information Page' for this study.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the following procedures:  
Completion of survey on BBV testing.
4. I understand that my participation is entirely voluntary and that I can withdraw from the study at any time, without prejudice.
5. I understand that all research data will be securely stored on Teesside University premises for a period of 2 years and then destroyed.
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered for the study may be published provided that I cannot be identified as a participant.
8. I understand that my identity will be kept confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw my information within four weeks after taking part. If you wish to withdraw from the study, please contact either of the lead researchers Professor Paul van Schaik (P.Van-Schaik@tees.ac.uk) or Dr David Chadwick (Davidr.chadwick@nhs.net)

Do you agree to the above terms? By clicking Yes, you consent that you are willing to answer the questions in the survey. You must click Yes in order to take the survey.

☐ Yes

☐ No



Improving blood-borne virus (BBV) testing in primary care

### Instructions for participants

1. Please answer the demographic questions on the next page
2. During the survey, where we are exploring different scenarios, please assume that all hypothetical patients that will be presented are patients from your practice
3. Please note an answer to all questions are mandatory and once answered you cannot return to a previous page
4. To enable you to view the images clearly, please set your magnification/zooming to 133% if using Firefox and 125% if using Chrome, Internet Explorer or Edge



Improving blood-borne virus (BBV) testing in primary care

Thank you for participating in our survey. Your feedback is important

## Demographic Questions

Gender

☐ Male

☐ Female

☐ Other (please specify)

Age

Current job role as a healthcare worker

Number of years in current role

Total of number of years as a healthcare worker (current role and any previous roles)

Name of General Practice



## Improving blood-borne virus (BBV) testing in primary care

### Patient 1

Steven is a 30 year old sales executive with a history of well-controlled asthma. He's come today for a review of his asthma and is generally fit and healthy.

The following alert appears on SystmOne. How would you respond to the alert?

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No ☐ More Information on risks

Most recent requests made for this patient:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 2 or 2 antibody antigen, STI/AB, HbA1c	Routine	PHQC	ASWYLLIE	REQ
28 Mar 2017 13:30:06	CYPICR	Normal	PHATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	STI/AB	Routine	PHATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbAg), HbAg, Hepatitis C antibody, HIV 2 or 2 antibody antigen	Routine	PHATH	ASWYLLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHATH	ASWYLLIE	REQ

- ☐ Yes
- ☐ No
- ☐ More Information on risks (this provides further information at the bottom of the alert)



## Improving blood-borne virus (BBV) testing in primary care

## Patient 1

Steven is a 30 year old sales executive with a history of well-controlled asthma. He's come today for a review of his asthma and is generally fit and healthy

The screenshot shows a medical software interface with a top navigation bar containing various clinical specialties. A central window displays a 'Rules - Webpage Dialog' for 'BBV panel'. The dialog contains the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)  
☐ Yes ☒ No

Below the dialog, there is a table titled 'Most recent requests made for this patient:' with columns for 'Requested', 'Investigations', 'Priority', 'Loc', 'Ordered', and 'Status'. The table contains several rows of test requests, including 'Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbA1c', 'CTPCR', 'SYPAB', 'Hepatitis B infection (HbAg), HbAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen', and 'Urine for Micro and Culture (MC&C)'. On the right side of the interface, there is a 'DRUG MONITORING' section with a list of drugs and their status.

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

## Patient 1

Steven is a 30 year old sales executive with a history of well-controlled asthma. He's come today for a review of his asthma and is generally fit and healthy

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Dialog" is displayed, showing a "BBV panel" with the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No

Risk assessment  
24.03.2014. Read code X100E%: pneumonia  
Current residence in higher-prevalence area  
02.12.2015 ALT 67 IU/mL

Below the pop-up, the interface shows a table of "Most recent requests made for this patient:"

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYFAP, HbA1c	Routine	PHREC	ASHYLLSE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHPATH	ASHYLLSE	REQ
28 Mar 2017 13:30:06	SYFAP	Routine	PHPATH	ASHYLLSE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHPATH	ASHYLLSE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MCBC)	Routine	PHPATH	ASHYLLSE	REQ

☐ Yes

☐ No



Improving blood-borne virus (BBV) testing in primary care

## Patient 1

Steven is a 30 year old sales executive with a history of well-controlled asthma. He's come today for a review of his asthma and is generally fit and healthy

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Cloning" is displayed over the main interface. The pop-up contains the following text:

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:

- not tested in the past 5 years

BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment

24.03.2014. Read code X100E%: pneumonia

Current residence in higher-prevalence area

02.12.2015 ALT 67 IU/mL

Most recent requests made for this patient:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HIVAB, nHivAg	Routine	PHBDC	ADHYLLE	REQ
28 Mar 2017 13:30:06	CYPICR	Routine	PHBDC	ADHYLLE	REQ
28 Mar 2017 13:30:06	CYPICR	Routine	PHBDC	ADHYLLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (nHivAg), nHivAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBDC	ADHYLLE	REQ
22 Mar 2017 09:02:03	Urea for Micro and Culture (MICAS)	Routine	PHBDC	ADHYLLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 2

Melanie is a 47 year old nurse, generally in good health, who has come today complaining of worsening migraines

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc.	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody; HIV 1 or 2 antibody antigen; STI test; HbA1c	Routine	PH&G	ADHYLLB	REQ
28 Mar 2017 13:30:06	CYP19	Routine	PH&G	ADHYLLB	REQ
28 Mar 2017 13:30:06	STIAP	Routine	PH&G	ADHYLLB	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c); HbA1c; Hepatitis C antibody; HIV 1 or 2 antibody antigen	Routine	PH&G	ADHYLLB	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&G	ADHYLLB	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)

**NHS**

Improving blood-borne virus (BBV) testing in primary care



## Patient 2

Melanie is a 47 year old nurse, generally in good health, who has come today complaining of worsening migraines

The screenshot shows a medical software interface with a top navigation bar containing various clinical areas like Pathology, GP, Radiology, etc. The main area displays a patient's medical history with sections for 'Non gynaec cytology', 'HE-CIRCUIT TRIAL', and 'STABLET Trial'. A pop-up window titled 'Rules - Webpage Dating' is overlaid, providing information about BBV testing. The text in the pop-up states: 'Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years'. It then asks 'Would you like to request BBV tests? (select 'No' if not required or already requested)' with radio buttons for 'Yes' and 'No'. The 'No' button is selected. Below the pop-up, there is a table titled 'Most recent requests made for this patient:' showing a list of requests with columns for 'Requested', 'Investigations', 'Priority', 'Loc', 'Ordered', and 'Status'.

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HbA1c, HbA1c	Routine	PHOC	ADMTLLE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHATH	ADMTLLE	REQ
28 Mar 2017 13:30:06	CTPCR	Routine	PHATH	ADMTLLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHATH	ADMTLLE	REQ
22 Mar 2017 08:02:03	Urine for Micro and Culture (MCBS)	Routine	PHATH	ADMTLLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)



Improving blood-borne virus (BBV) testing in primary care

## Patient 2

Melanie is a 47 year old nurse, generally in good health, who has come today complaining of worsening migraines

The alert now has additional information on risk factors

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No

Risk assessment  
24.02.2016 Read code Xa3HF: CIN 2  
02.12.2016 ALT 56 IU/mL

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigens, ZPPA8, HbA1c	Routine	PHBEC	ASWYLLIE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	ZPPA8	Routine	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbAg), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBATH	ASWYLLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHBATH	ASWYLLIE	REQ

☐ Yes

☐ No



Improving blood-borne virus (BBV) testing in primary care

## Patient 2

Melanie is a 47 year old nurse, generally in good health, who has come today complaining of worsening migraines

The screenshot shows a clinical decision support system interface. A central pop-up window titled "Rules - Webpage Dating" displays a decision rule for BBV testing. The rule states: "Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years". Below this, it asks "Would you like to request BBV tests? (select 'No' if not required or already requested)" with radio buttons for "Yes" and "No". The "No" button is selected. Below the question, it shows "Risk assessment" with two entries: "24.02.2016 Read code X100E9: pneumonia" and "02.12.2016 ALT 56 IU/mL". The background interface shows a patient's medical history with various test results and a table of recent requests.

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, Syphilis, HBsAg	Routine	PHBDC	ADHYLEE	REQ
28 Mar 2017 13:30:06	CRP	Normal	PHBATH	ADHYLEE	REQ
28 Mar 2017 13:30:06	FTIR	Routine	PHBATH	ADHYLEE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HBeAg), HBsAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBATH	ADHYLEE	REQ
22 Mar 2017 08:02:03	Urine for Micro and Culture (MC&S)	Routine	PHBATH	ADHYLEE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 3

George is a 74 year old retired factory worker with COPD and type 2 diabetes. He's come today as he has a cough and worsening shortness of breath

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
24 Mar 2017 08:07:37	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HbA1c, HbA1c	Routine	PHAS	ASHTYLE	RQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHAS	ASHTYLE	RQ
28 Mar 2017 13:30:06	SYNAP	Routine	PHAS	ASHTYLE	RQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAS	ASHTYLE	RQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAS	ASHTYLE	RQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)



Improving blood-borne virus (BBV) testing in primary care

### Patient 3

George is a 74 year old retired factory worker with COPD and type 2 diabetes. He's come today as he has a cough and worsening shortness of breath

The screenshot shows a clinical decision support system interface. At the top, there are tabs for various medical specialties: Pathology, GP, Requesting, Imaging, Radiology, GP Radiology, Request, New Services, Community, Rheumatology, SFA, Services, Palliative Care, Only, A&E, Rheumatology, External, BII, \*GP, Pathology, Cardiology, Dermatology, Tumour, Markers, Clinical, Infection, and Services. A notification at the top right says "You have new ICDM 10".

On the left, there are sections for "Request Panels", "Clinical Trials", "Endocrine Panel", "Cardiology and Diabetes", "Search", and "Set as Default Panel".

The main area displays a patient's medical history with a "BBV panel" pop-up dialog box. The dialog box contains the following text:

Rules - Webpage Dialog  
BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

On the right, there is a "DRUG MONITORING" section with a list of drugs: Acetaminophen, Lactulose, Metoprolol, Mycophenolate, and Sildenafil. Below this is a "Lymphocyte Subsets" section with checkboxes for "CD4 Flow Cytometry", "Cytology Request", "NEFSCAN Trial", and "Dimer TESTING". There are also checkboxes for "SYFAR" and "CTPCR".

At the bottom, there is a table titled "Most recent requests made for this patient:" with columns for "Requested", "Investigations", "Priority", "Loc", "Ordered", and "Status".

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 09:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYFAR, HbA1c	Routine	PHQSC	ADWYLLB	REQ
28 Mar 2017 13:36:06	CTPCR	Normal	PHQATH	ADWYLLB	REQ
28 Mar 2017 13:36:06	SYFAR	Routine	PHQATH	ADWYLLB	REQ
28 Mar 2017 13:36:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHQATH	ADWYLLB	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHQATH	ADWYLLB	REQ

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

### Patient 3

George is a 74 year old retired factory worker with COPD and type 2 diabetes. He's come today as he has a cough and worsening shortness of breath

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. At the top, there is a navigation bar with various medical specialties. The main area displays a patient's medical history, including a 'BBV panel' section. A pop-up dialog box titled 'Rules - Webpage Dialog' is open, showing a clinical rule that suggests BBV testing based on the patient's risk factors. The dialog box includes a question: 'Would you like to request BBV tests? (select 'No' if not required or already requested)' with radio buttons for 'Yes' and 'No'. Below the question, it shows a risk assessment: '12.11.2015 Read code X100E%: pneumonia' and '02.12.2016 ALT 78 IU/mL'. The background interface shows a list of recent requests for the patient, including tests for Hepatitis C, HIV, and other blood-borne viruses.

☐ Yes

☐ No



Improving blood-borne virus (BBV) testing in primary care

## Patient 3

George is a 74 year old retired factory worker with COPD and type 2 diabetes. He's come today as he has a cough and worsening shortness of breath

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Dialog" is displayed, showing a "BBV panel" with the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment:  
12.11.2015 Read code X100E%: pneumonia  
02.12.2016 ALT 78 IU/mL

Below the pop-up, the "Most recent requests made for this patient:" section shows a table of requests:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HIV Ab, HIV Ag	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	CTPCR	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	STPAB	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HBeAg, HBeAb, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAC	ASHTYLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)



Improving blood-borne virus (BBV) testing in primary care

## Patient 4

Sandra is a 38 year old stay-at-home mum who suffers from IBS and menorrhagia. She's come today because of worsening menorrhagia

The following alert appears on SystmOne. How would you respond to the alert?

**Rules - Webpage Dialog**

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HCV 1 or 2 antibody antigen, HPA8, HbAg	Routine	PHAC	ASWYLLB	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHAC	ASWYLLB	REQ
28 Mar 2017 13:30:06	STPAB	Routine	PHAC	ASWYLLB	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbAg), HbAg, Hepatitis C antibody, HCV 1 or 2 antibody antigen	Routine	PHAC	ASWYLLB	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAC	ASWYLLB	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)

**NHS**

Improving blood-borne virus (BBV) testing in primary care



## Patient 4

Sandra is a 38 year old stay-at-home mum who suffers from IBS and fibromyalgia. She's come today because of worsening menorrhagia

The screenshot shows a clinical decision support system interface. At the top, there is a navigation bar with various medical specialties. The main area displays a patient's medical history, including a list of conditions and a table of recent requests. A pop-up dialog box titled "Rules - Webpage Dialog" is open, showing a message about the patient's risk of blood-borne virus (BBV) infection and a question about whether to request BBV tests.

**Rules - Webpage Dialog**

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, STPAB, HbA1c	Routine	PHBDC	ADHILLIE	REQ
28 Mar 2017 13:30:06	CTPCH	Normal	PHBATH	ADHILLIE	REQ
28 Mar 2017 13:30:06	STPAB	Routine	PHBATH	ADHILLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBATH	ADHILLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MCAS)	Routine	PHBATH	ADHILLIE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

#### Patient 4

Sandra is a 38 year old stay-at-home mum who suffers from IBS and fibromyalgia. She's come today because of worsening menorrhagia

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Dialog" is displayed, showing a "BBV panel" with the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No

Risk assessment  
02.11.2014 Read code XE2y7 infectious mononucleosis  
Current residence in higher-prevalence area

The background interface shows a patient's medical history with various tabs like "Request Panels", "Clinical Trials", "Endocrine Panel", "Conditions and Diseases", and "Search". A table at the bottom lists "Most recent requests made for this patient:" with columns for "Requested", "Investigations", "Priority", "Loc", "Ordered", and "Status".

Requested	Investigations	Priority	Loc	Ordered	Status
26 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbA1c	Routine	PHBEC	ASWYLLIE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	SYPAB	Routine	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBATH	ASWYLLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (PCR)	Routine	PHBATH	ASWYLLIE	REQ

☐ Yes

☐ No



Improving blood-borne virus (BBV) testing in primary care

## Patient 4

Sandra is a 38 year old stay-at-home mum who suffers from IBS and fibromyalgia. She's come because of worsening menorrhagia

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Drafting" is displayed, showing a "BBV panel" with the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment  
02.11.2017 Read code X100E%: pneumonia  
Current residence in higher-prevalence area

Below the pop-up, the interface shows a table of "Most recent requests made for this patient:"

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HbA1c, HbA1c	Routine	PH&C	ASHTYLE	REQ
28 Mar 2017 13:35:06	CTPCR	Routine	PH&C	ASHTYLE	REQ
28 Mar 2017 13:35:06	CTPCR	Routine	PH&C	ASHTYLE	REQ
28 Mar 2017 13:35:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PH&C	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&C	ASHTYLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)



Improving blood-borne virus (BBV) testing in primary care

## Patient 5

Gerry is a 59 year old office worker with hypertension who has come today as he's not tolerating his new antihypertensive medications well

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 09:07:17	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbA1c	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	SYPAB	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c, HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen)	Routine	PHAC	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&S)	Routine	PHAC	ASHTYLE	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 5

Gerry is a 59 year old office worker with hypertension who has come today as he's not tolerating his new hypertensive medications well

The screenshot shows a clinical decision support system interface. At the top, there's a navigation bar with various medical specialties. The main area displays a patient's medical history, including a 'Non gynaec cytology' result. A pop-up window titled 'BBV panel' is open, providing clinical guidance on when to request BBV tests. The text in the pop-up states: 'Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.' Below this, it asks 'Would you like to request BBV tests? (select 'No' if not required or already requested)' with radio buttons for 'Yes' and 'No'. The 'No' button is selected. To the right of the pop-up, there's a 'DRUG MONITORING' section with a list of drugs and their monitoring status. At the bottom, there's a table of 'Most recent requests made for this patient:' with columns for 'Requested', 'Investigations', 'Priority', 'Loc', 'Ordered', and 'Status'.

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 5

Gerry is a 59 year old office worker with hypertension who has come today as he's not tolerating his new hypertensive medications well

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Dialog" is displayed, providing information about blood-borne virus (BBV) testing. The pop-up text reads:

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests? (select 'No' if not required or already requested)

☐ Yes ☐ No

Risk assessment  
02.11.2016 Read code X100E9: pneumonia  
02.11.2016 ALT 67 IU/mL

The background interface shows a patient's medical history with various tabs like Pathology, GP Reporting, Radiology, etc. A table at the bottom lists "Most recent requests made for this patient:" with columns for Requested, Investigations, Priority, Loc, Ordered, and Status.

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27 Hepatitis C antibody, HIV 1 or 2 antibody antigen, HbA1c, HbA1g		Routine	PHIC	ADHYLLE	REQ
28 Mar 2017 13:30:06 CTPOC		Routine	PHIC	ADHYLLE	REQ
28 Mar 2017 13:30:06 CTPOC		Routine	PHIC	ADHYLLE	REQ
28 Mar 2017 13:30:06 Hepatitis B infection (HbA1g), HbA1g, Hepatitis C antibody, HIV 1 or 2 antibody antigen		Routine	PHIC	ADHYLLE	REQ
22 Mar 2017 09:02:03 Urine for Micro and Culture (MC&C)		Routine	PHIC	ADHYLLE	REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 5

Gerry is a 59 year old office worker with hypertension who has come today as he's not tolerating his new antihypertensive medications well

The screenshot shows a clinical decision support system interface. A pop-up dialog box titled "Rules - Webpage Dialog" is displayed, containing the following text:

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:

- not tested in the past 5 years

*BBV testing is likely to be cost-effective in patients such as this with identified risk factors.*

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment  
02.11.2016 Read code X100E%: pneumonia  
02.11.2016 ALT 67 IU/mL

Below the dialog box, the "Most recent requests made for this patient:" section shows a table of requests:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbA1c	Routine	PH&SC	ADWYLLIE	REQ
28 Mar 2017 13:30:06	CTPCR	Routine	PH&SC	ADWYLLIE	REQ
28 Mar 2017 13:30:06	SYPAB	Routine	PH&SC	ADWYLLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PH&SC	ADWYLLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&SC	ADWYLLIE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 6

Audrey is a 72 year old woman who rarely visits her GP and has little significant past history. She's come today as she's feeling more depressed than normal

The following alert appears on SystmOne. How would you respond to the alert?

**Rules - Webpage Dialog**  
**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.  
Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	hepatitis C antibody, HIV 1 or 2 antibody-antigen, SYPHAS, HbsAg	Routine	PHHSC	ASHVILLE	REQ
28 Mar 2017 13:30:06	CTPCR	Urgent	PHHSC	ASHVILLE	REQ
28 Mar 2017 13:30:06	SYPHAS	Routine	PHHSC	ASHVILLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbsAg), HIVAg, Hepatitis C antibody, HIV 1 or 2 antibody-antigen	Routine	PHHSC	ASHVILLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHHSC	ASHVILLE	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)

**NHS**

Improving blood-borne virus (BBV) testing in primary care



## Patient 6

Audrey is a 72 year old woman who rarely visits her GP and has little significant past history. She's come today as she's feeling more depressed than usual

**Rules - Webpage Dialog**

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPH, HbA1c	Routine	PHAC	ADIVYLL	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHAC	ADIVYLL	REQ
28 Mar 2017 13:30:06	SYPH	Routine	PHAC	ADIVYLL	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ADIVYLL	REQ
22 Mar 2017 08:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAC	ADIVYLL	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 6

Audrey is a 72 year old woman who rarely visits her GP and has little significant past history. She's come today as she's feeling more depressed than usual

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A pop-up window titled "Rules - Webpage Dialog" is displayed, providing information about blood-borne virus (BBV) testing. The window contains the following text:

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. Last tests for HIV, hepatitis B or hepatitis C: - not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No

Risk assessment  
12.01.2014 Read code X100E96: pneumonia  
Current residence in higher-prevalence area

Below the pop-up, the interface shows a table of "Most recent requests made for this patient:"

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, Syphilis, HbA1c	Routine	PHAC	ASWYLL	REQ
28 Mar 2017 13:30:06	CTPCR	Routine	PHAC	ASWYLL	REQ
28 Mar 2017 13:30:06	SYNAP	Routine	PHAC	ASWYLL	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ASWYLL	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MCAG)	Routine	PHAC	ASWYLL	REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 6

Audrey is a 72 year old woman who rarely visits her GP and has little significant past history. She's come today as she's feeling more depressed than normal

The screenshot shows a medical software interface with a patient's medical history. A pop-up window titled "Rules - Webpage Dialog" is displayed, showing a risk assessment for blood-borne virus (BBV) infection. The window contains the following text:

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Last tests for HIV, hepatitis B or hepatitis C:  
- not tested in the past 5 years

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment  
12.01.2014 Read code X100E%: pneumonia  
Current residence in higher-prevalence area

The background interface shows a patient's medical history with various tabs and a list of recent requests.

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 7

Magda is a 33 year old woman originally from Poland who is a hotel receptionist and rarely attends the practice. She has come seeking contraceptive advice

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is cost-effective.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbAg	Routine	PH&CH	ASHTYLE	REQ
29 Mar 2017 13:30:06	CTPCR	Normal	PH&CH	ASHTYLE	REQ
29 Mar 2017 13:30:06	SYPAB	Routine	PH&CH	ASHTYLE	REQ
29 Mar 2017 13:30:06	Hepatitis B infection (HbAg), HbAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PH&CH	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&CH	ASHTYLE	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)

## Patient 7

Magda is a 33 year old woman originally from Poland who is a hotel receptionist and rarely attends the practice. She has come seeking contraceptive advice

The screenshot shows a medical software interface with a patient's record. A decision support tool is open, titled "BBV panel". The tool provides clinical guidance based on the patient's history and current status.

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is likely to be cost-effective in patients such as this with identified risk factors.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 2 or 2 antibody antigen, STPAB, HbA1c	Routine	PHOC	ADSYLLB	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHPATH	ADSYLLB	REQ
28 Mar 2017 13:30:06	STPAB	Routine	PHPATH	ADSYLLB	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 2 or 2 antibody antigen	Routine	PHPATH	ADSYLLB	REQ
22 Mar 2017 09:02:02	Urine for Micro and Culture (MICRO)	Routine	PHPATH	ADSYLLB	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 7

Magda is a 33 year old woman originally from Poland who is a hotel receptionist and rarely attends the practice. She has come seeking contraceptive advice

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A central dialog box titled "Rules - Webpage Dialog" displays a "BBV panel" alert. The alert text states: "Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. BBV testing is cost-effective in populations where the prevalence is >1:500". Below this, it asks "Would you like to request BBV tests? (select 'No' if not required or already requested)" with radio buttons for "Yes" and "No". A "Risk assessment" section shows "12.11.2016 Read code Y109E% CIN 2" and "Current residence in higher-prevalence area". The background interface includes a top navigation bar with various clinical specialties, a left sidebar with "Requested Panels" and "Clinical Trials", and a right sidebar with "DRUG MONITORING". At the bottom, there is a table of "Most recent requests made for this patient:" and a section for "Investigations" with a table of test results.

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, STPAB, HbA1c	Routine	PHBEC	ASWYLLIE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	STPAB	Routine	PHBATH	ASWYLLIE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHBATH	ASWYLLIE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MCRC)	Routine	PHBATH	ASWYLLIE	REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 7

Magda is a 33 year old woman originally from Poland who is a hotel receptionist and rarely attends the practice. She has come seeking contraceptive advice

The screenshot shows a medical software interface with a patient's record. A decision support tool titled "Rules - Webpage Dialog" is open, displaying the following text:

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended. *BBV testing is likely to be cost-effective in patients such as this with identified risk factors.*

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

Risk assessment  
12.11.2016 Read code X100E%: pneumonia  
Current residence in higher-prevalence area

Below the dialog, the "Most recent requests made for this patient:" section shows a table of recent tests:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:37	Hepatitis C antibody, HIV 1 or 2 antibody antigen, STPAB, HbSAg	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:35:06	CTPCR	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:35:06	STPAB	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:35:06	Hepatitis B infection (HbSAg), HbSAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAC	ASHTYLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 8

Stuart is a 63 year old engineer with little significant past medical history. He has attended due to urinary frequency

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No ☐ More Information on risks

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAB, HbA1c	Routine	PHAC	ASWYLLIE	REQ
28 Mar 2017 13:36:06	CTPCR	Routine	PHAC	ASWYLLIE	REQ
28 Mar 2017 13:36:06	SYPAB	Routine	PHAC	ASWYLLIE	REQ
28 Mar 2017 13:36:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ASWYLLIE	REQ
22 Mar 2017 08:02:03	Urine for Micro and Culture (MC&C)	Routine	PHAC	ASWYLLIE	REQ

- ☐ Yes
- ☐ No
- ☐ More information on risks (this provides more information at the bottom of the alert)



## Patient 8

Stuart is a 63 year old engineer with little significant past medical history. He has attended due to urinary frequency

The screenshot shows a clinical decision support system interface. A pop-up dialog box titled "BBV panel" is displayed in the center. The dialog contains the following text:

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

The background interface shows a patient's medical history with various tabs like "Pathology", "GP", "Radiology", etc. A table at the bottom lists "Most recent requests made for this patient:" with columns for "Requested", "Investigations", "Priority", "Loc", "Ordered", and "Status".

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, STI/MS, HbA1c	Routine	PHQ	ADHILLB	REQ
28 Mar 2017 13:36:06	CYPOR	Normal	PHQ	ADHILLB	REQ
28 Mar 2017 13:36:06	STI/MS	Routine	PHQ	ADHILLB	REQ
29 Mar 2017 13:36:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHQ	ADHILLB	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHQ	ADHILLB	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 8

Stuart is a 63 year old engineer with little significant past medical history. He has attended due to urinary frequency

The alert now has additional information on risk factors

The screenshot shows a clinical decision support system interface. A central dialog box titled "Rules - Webpage Dialog" displays a "BBV panel" alert. The alert text states: "Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended." Below this, it asks "Would you like to request BBV tests? (select 'No' if not required or already requested)" with radio buttons for "Yes" and "No". At the bottom of the dialog, it shows a "Risk assessment" with the text: "12.11.2016 Read code X100E9: pneumonia" and "Current residence in higher-prevalence area".

The background interface includes a top navigation bar with various clinical categories like Pathology, GP, Radiology, etc. On the left, there are panels for "Request Panels", "Clinical Trials", and "Search". On the right, there is a "DRUG MONITORING" section. At the bottom, a table lists "Most recent requests made for this patient:" with columns for "Requested", "Investigations", "Priority", "Loc", and "Ordered Status".

Requested	Investigations	Priority	Loc	Ordered Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYFAG, HBsAg	Routine	PHOC	ADWYLLIE REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHATH	ADWYLLIE REQ
28 Mar 2017 13:30:06	SYFAG	Routine	PHATH	ADWYLLIE REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HBsAg), HBsAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHATH	ADWYLLIE REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PHATH	ADWYLLIE REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 8

Stuart is a 63 year old engineer with little significant past medical history. He has attended due to urinary frequency

The screenshot shows a medical software interface with a top navigation bar containing various clinical service links. The main area is divided into a left sidebar with 'Request Panels' and a central workspace. A 'Rules - Webpage Dialog' is open, displaying a decision support message for BBV testing. The message states that clinical and/or lab test data suggest the patient is at higher risk of blood-borne virus (BBV) infection and recommends testing. It asks the user if they would like to request BBV tests, with 'Yes' selected. Below this, a risk assessment is provided: '12.11.2016 Read code X100E%: pneumonia' and 'Current residence in higher-prevalence area'. The background shows a 'Most recent requests made for this patient:' table with columns for Requested, Investigations, Priority, Loc, Ordered, and Status.

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigens, SYPAB, HbA1c	Routine	PH&C	ASHVLLB	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PH&C	ASHVLLB	REQ
28 Mar 2017 13:30:06	SYPAB	Routine	PH&C	ASHVLLB	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigens	Routine	PH&C	ASHVLLB	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&C	ASHVLLB	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 9

Hayley is a 19 year old college student with a history of asthma. She's come today as she's feeling tired all the time

The following alert appears on SystmOne. How would you respond to the alert?

**BBV panel**

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☒ Yes ☐ No

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPHIL, HbsAg	Routine	PH&BC	ASHVILLE	REQ
29 Mar 2017 13:30:06	CTPCR	Routine	PH&BC	ASHVILLE	REQ
29 Mar 2017 13:30:06	CTPCR	Routine	PH&BC	ASHVILLE	REQ
29 Mar 2017 13:30:06	CTPCR	Routine	PH&BC	ASHVILLE	REQ
29 Mar 2017 13:30:06	Hepatitis B infection (HbsAg), HbsAb, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PH&BC	ASHVILLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	PH&BC	ASHVILLE	REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 9

Hayley is a 19 year old college student with a history of asthma. She's come today as she's feeling tired all the time

The screenshot shows a clinical decision support system interface. A pop-up dialog box titled "Rules - Webpage Dialog" is displayed, containing the following text:

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

The background interface shows a patient's medical history and a list of recent requests. The "Recent requests" table is as follows:

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, STPAB, HBsAg	Routine	RefSC	ADHYLLS	REQ
29 Mar 2017 13:30:06	CTPDR	Routine	RefSC	ADHYLLS	REQ
29 Mar 2017 13:30:06	STPAB	Routine	RefSC	ADHYLLS	REQ
29 Mar 2017 13:30:06	Hepatitis B infection (HBeAg), HBsAg, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	RefSC	ADHYLLS	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MC&C)	Routine	RefSC	ADHYLLS	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 10

John is a 44 year old HGV driver with type 2 diabetes. He's come today for his annual diabetes review. The following alert appears on SystmOne. How would you respond to the alert?

**Rules - Webpage Dialog**  
BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☐ No

**Most recent requests made for this patient:**

Requested	Investigations	Priority	Loc	Ordered	Status
29 Mar 2017 09:07:17	Hepatitis C antibody, HIV 1 or 2 antibody antigen, SYPAD, HbA1c	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	CTPCR	Normal	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	SYPAD	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HbA1c), HbA1c, Hepatitis C antibody, HIV 1 or 2 antibody antigen	Routine	PHAC	ASHTYLE	REQ
22 Mar 2017 09:02:03	Urine for Micro and Culture (MCBC)	Routine	PHAC	ASHTYLE	REQ

☐ Yes

☐ No

**NHS**

Improving blood-borne virus (BBV) testing in primary care

## Patient 10

John is a 44 year old HGV driver with type 2 diabetes. He's come today for his annual diabetes review

The screenshot shows a clinical decision support system interface. A pop-up dialog box titled "Rules - Webpage Dialog" is displayed, containing the following text:

BBV panel

Clinical and/or lab test data suggest this patient is at higher risk of blood-borne virus (BBV) infection. Patient has not had tests for HIV, hepatitis B or hepatitis C in the last 12 months. BBV testing is recommended.

Would you like to request BBV tests?  
(select 'No' if not required or already requested)

☐ Yes ☒ No

The background interface shows a patient's medical history with various tabs like "Pathology", "GP", "Radiology", etc. A table at the bottom lists "Most recent requests made for this patient:" with columns for "Requested", "Investigations", "Priority", "Loc", "Ordered", and "Status".

Requested	Investigations	Priority	Loc	Ordered	Status
25 Mar 2017 08:07:27	Hepatitis C antibody, HIV 1 or 2 antibody antigen, HIV RNA, HIV Ag	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	CTPAC	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	CTPAC	Routine	PHAC	ASHTYLE	REQ
28 Mar 2017 13:30:06	Hepatitis B infection (HBeAg, HBeAb, Hepatitis C antibody, HIV 1 or 2 antibody antigen)	Routine	PHAC	ASHTYLE	REQ
22 Mar 2017 09:00:03	Urine for Micro and Culture (MCU)	Routine	PHAC	ASHTYLE	REQ

Give reasons for not requesting BBV tests

- ☐ Patient declined tests
- ☐ Patient has been tested for BBV's elsewhere
- ☐ Patient doesn't have capacity to consent for testing
- ☐ Identified risks are insufficient to justify testing
- ☐ Other (please specify)



Improving blood-borne virus (BBV) testing in primary care

## Additional Questions

One question that has arisen is why this alert always recommends testing for all the BBVs. Another option to testing for all 3 BBVs is that there are several different alert recommendations. For example in a patient who only has risks for HIV, only an HIV test would be recommended, or in a patient who only has risks for viral hepatitis that only hepatitis B and C tests are recommended. Potential advantages of this system are reduced numbers of tests ordered and potentially less anxiety if HIV tests are not recommended. Disadvantages are that often patients have overlapping risks for all 3 viruses and only testing for one or two may mean missing some infections; also, this would make the system more complex with multiple different alert recommendations, with the potential for confusion amongst users.

Which alert recommendation would you prefer?

- ☐ Single test (for all BBV's)
- ☐ Multiple tests (i.e. several different alerts with different combinations of tests recommended)

Do you have any comments or suggestions in relation to this issue?

Another consideration for this system is the potential for the alert to add significant time pressure to consultations, given the need to discuss testing with patients.

On average, how much time do you think this alert will add to a consultation? (please indicate below in minutes; for 30 seconds please insert 0.5 etc)

I predict i would use the automated prompting for blood-borne virus-testing during my consultations with patients if such a prompting facility was introduced in my work

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I oppose a potential change from the current working practice of no prompting for blood-borne virus-testing during consultation with patients to automated prompting for blood-borne virus-testing

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Which of the following prompt options do you prefer

- ☐ 'A hard prompt': you have to answer the prompt regarding BBV testing before you can continue using ICE or SystmOne
- ☐ 'A soft prompt': you can answer the prompt regarding BBV testing or otherwise ignore and continue using ICE or SystmOne



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Suppressing Repeat Alerts



**Another anticipated consideration for this alert is its potential to keep on being triggered, even when a clinician has decided not to test or the patient has refused a test. On the other hand it is possible the patient may develop additional risk factors subsequently which make testing a higher priority. In order to ensure the alert doesn't keep on being triggered inappropriately please answer the following two questions.**

When a clinician has decided not to order the test, for how long afterwards should the alert be suppressed?

- ☐ 6 months
- ☐ 1 year
- ☐ 2 years
- ☐ 5 years
- ☐ Permanently

When a patient has refused the test, for how long afterwards should the alert be suppressed?

- ☐ 6 months
- ☐ 1 year
- ☐ 2 years
- ☐ 5 years
- ☐ Permanently



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## Registration

**Dear participant, please answer the following questions for registration purposes. This information is needed, so you can be reimbursed for your time completing the study.**

What is your first name (e.g. John)?

What is your second name (e.g. Smith)?

What is the name of your General Practice?

## **End of survey - thank you for completing the study**

The data from your responses will be used for analysis and all information provided by you will be treated in strict confidence.

You can withdraw the information you provide within four weeks after taking part. If you wish to withdraw from the study, please contact either of the lead researchers:

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