EuroTEST
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Addressing Hepatitis, HIV, STIs and TB

Practical implementation guidance for BBV opt-out testing in emergency departments in Europe

Draft

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DRAFT

EuroTEST

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Introduction

EuroTEST (www.eurotest.org) is a pan-European initiative with the overall objective to ensure that people living with HIV, viral hepatitis, STIs or TB have access to testing and enter care early as well as to study the decrease in the proportion presenting late for care.
Since its foundation, the EuroTEST initiative has evolved into a recognized European platform that brings together independent experts from diverse sectors to influence policy, share knowledge, and build a robust evidence base.

In 2023 EuroTEST hosted the HepHIV Conference in Madrid where presentations and sessions discussed screening for bloodborne viruses (BBV) such as HIV, HBV and HCV in emergency departments as a highly effective, feasible, and cost-effective intervention in high-prevalence areas. A key takeaway from these discussions was the lack of concrete implementation guidance for other countries to use and learn from.

In 2025, EuroTEST began the development of a practical guidance document to support the implementation of blood-borne virus (BBV) testing in EDs across high-prevalence settings in Europe drawing on pilot experiences and expert knowledge.

Aim and target audience

The aim of this guidance is to provide practical guidance to support the implementation of BBV opt-out testing in emergency departments in high prevalence settings in Europe. The guidance document will serve as a toolkit, outlining key considerations for implementation and showcase best practices from different countries and different settings illustrating how different individuals can adapt these practices to their unique situation.

The primary audience for this guidance is politicians, clinicians, and public health physicians.

Background

Late diagnosis of BBV is associated with poorer outcomes and increased transmission. According to the WHO estimates 791,531 people in the WHO European Region were living with transmissible levels of HIV in 2023 [1] . Of these, 48% were undiagnosed, and 37% were diagnosed but not receiving antiretroviral treatment (ART). Available modelling estimates that only 34% of people living with HBV and 38% of those, living with HCV were diagnosed in 2024 in EU/EEA [2]. Late presentation remains a critical barrier to epidemic control; over 50% of HIV diagnoses in the EU/EEA occur with CD4 counts <200 cells/mm^3 [1].
Undiagnosed and untreated BBV infections drive avoidable transmission, morbidity, and mortality. There is an urgent need to address the issue of undiagnosed BBVs and promote prompt testing and linkage to care in order to achieve the WHO 2030 goals of zero transmission of HIV, and the elimination of viral hepatitis as a public health threat [3]. Novel strategies are needed to reduce transmission of BBVs, and thus morbidity and mortality.
HIV, HBV, and HCV often affect overlapping populations and share similar pathways for diagnosis and care. A combined testing strategy is proved to be cost-effective and offers significant benefits on individual and public health levels [4]. Emergency departments provide a unique opportunity to address the diagnostic gap. EDs provide open-access care to large and diverse patient populations, including those at higher risk for BBVs, who otherwise have limited contact with routine health services. These include people who inject drugs (PWID), migrants, and individuals experiencing

homelessness [5]. Routine opt-out testing has proven to be particularly effective in increasing the detection rates of BBVs[6]. It optimizes the testing process, reducing stigma and barriers to testing. Guidelines from WHO and ECDC recommend opt-out BBV testing in hospital settings, including EDs, in areas with high diagnosed prevalence [4, 7]. Opt-out BBV testing is already well established and widely accepted in antenatal care in most European countries.

In 2006, the U.S. Centers for Disease Control and Prevention (CDC) published revised HIV testing guidelines for healthcare settings, introducing opt-out testing in emergency settings and removing requirements for pre-test counselling and separate written consent [8]. In line with CDC recommendations for one-time HCV screening for all adults, several U.S. EDs have since adopted opt-out HCV testing models [9].

In 2022, the UK initiated implementation of a BBV opt-out testing programme across 34 EDs in London, Manchester, Blackpool and Brighton, funded by NHS England. The Programme provides BBV testing anyone aged 16 years and over having a routine blood test during their ED attendance. Evidence from the US and UK show that opt-out BBV testing in EDs is highly effective in both identifying new cases and re-engaging previously diagnosed individuals in treatment and care who have been lost to follow-up [10-12]. From 2022 to 2024 the UK programme has successfully identified a high number of new diagnoses: 719 new HIV, 3.667 HBV, and 831 HCV diagnoses, the majority in individuals without prior BBV testing.

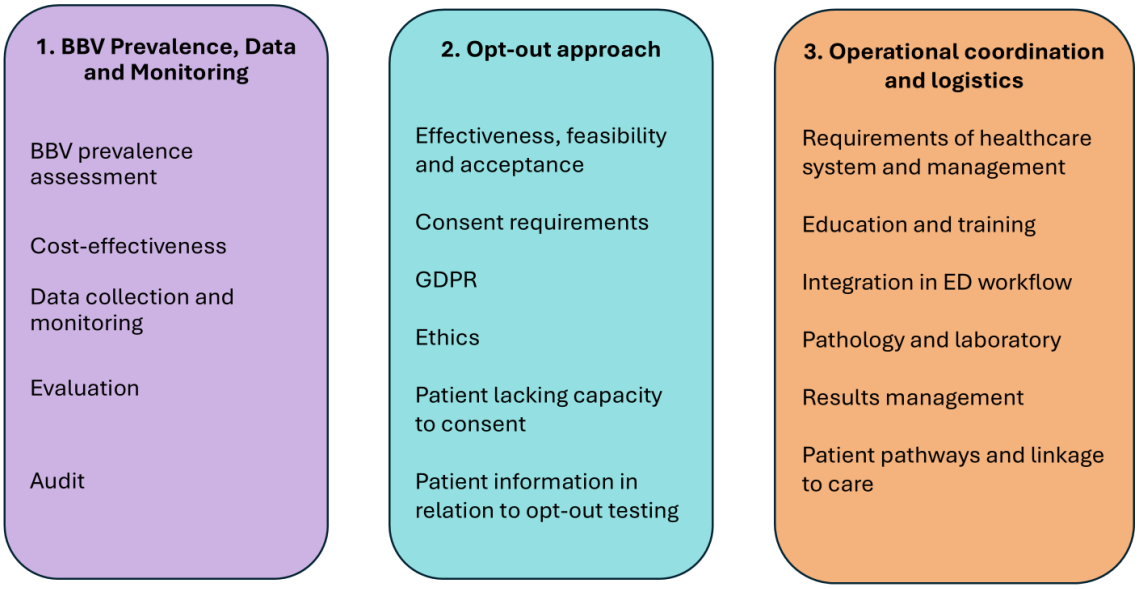
However implementation of opt-out testing in EDs across Europe remains inconsistent, and there are currently limited operational data.

Methodology

The development of this implementation guidance was coordinated by EuroTEST under the lead of Michael Rayment and Ann Sullivan and with the support of an expert advisory group convened for this activity supervising both the development process and the content of the guidance. The advisory group included experts in infectious diseases and emergency medicine, data experts from UKHSA, European organisations like ECDC, EASL and IUSTI, and patient organisations. Please find an overview of the advisory group in Annex 1.

The advisory group worked across three thematic workstreams to identify and discuss key topics that should be included in this practical implementation guidance. Figure 1 shows the three workstreams and key topics discussed under each workstream. Workstreams subsequently reviewed the available evidence that was collected under each topic through a rapid literature review.

Figure 1: Thematic workstreams within advisory group members discussed and defined key



Thematic workstreams that advisory group members worked within to discuss and define key topics to include in a practical implementation guidance for BBV opt-out testing in emergency departments.

Literature search and review

A rapid literature review was conducted to identify European studies and grey literature covering implementation of routine BBV testing in EDs. Literature searches were carried out in 3 databases: OVID Medline, Embase and Cochrane CENTRAL. Specific search strings were built for bloodborne viruses, opt-out testing and emergency departments. Grey literature was searched for similar conference proceedings, unpublished studies and reports.

Inclusion of studies was restricted to: Studies of adults (aged ≥ 15 years), conducted in countries within the WHO European region describing approaches to implementation of BBV routine testing in ED. No language restrictions were applied.

Title and abstract screening were performed by two independent reviewers and full text review and data extraction by one reviewer. Qualitative and quantitative data were extracted from included studies using a standardized data collection form in the Covidence application.

Review searches generated 1.537 results. After removal of duplicates title, and abstract screening was done for 1.226 references and full-text review for 202. Seventy-five references were ultimately included in the review.

Eligible references included 66 studies (14 conference abstracts, 52 published studies), 4 reports and 5 guidelines from the following countries: the UK (46), Ireland (3), France (6), Spain (6), Portugal (2), Belgium (1), Switzerland (2), Italy (2), the Netherlands (1) and Germany (2).
Twenty-five studies focused on testing for all three BBVs, 32 focused only on HIV, and 18 on HBV and HCV.

Decision making tables

To structure the evidence synthesis, the evidence base was compiled by developing decision-making tables under each guidance subtopic. Decision making tables and collected best practices were reviewed by the advisory group which provided expert recommendations resulting in a number of consensus practice recommendations for implementation of BBV opt-out testing in EDs.

Case studies

A range of case studies from different European countries illustrating different steps in implementing BBV routine testing in ED have been selected through the literature review and subsequent meetings with the advisory group. Please find collected case studies in Annex 2.

Public consultation process

The practice recommendations were presented at a session at the EACS 2025 conference in Paris with the aim to receive input on the different elements outlined in the recommendations from session participants. An estimated 300 delegates attended the session, and questions were received on a number of topics (see Annex 3). The questions were appraised by the steering group and responses incorporated into the final guidance document.

The practice recommendations will hereafter be put up for public consultation on the EuroTEST website inviting key stakeholder to provide feedback and input using a standardised form.

Structure of the Guidance

To ensure consistency and clarity, recommendations are phrased according to the strength of evidence underpinning the recommendation and the extent of expert consensus:

- For recommendations where there is a strong consensus supported by a robust evidence base and/or expert agreement the following wording is used: "*We recommend…" or "…should be considered.*"
- For recommendations where there was a weaker consensus and/or the supporting evidence is limited, the following wording is used: "*We suggest…" or "…may be considered.*"

The guidance is focused around 11 key steps to consider for implementation followed by requirements for healthcare systems and hospital management and the emergency medicine speciality.

Key steps to consider before implementing BBV opt-out testing in ED

BBV prevalence, data and monitoring	
1	**BBV prevalence assessment** Efforts should be made to understand the likely prevalence of undiagnosed blood borne viruses in the proposed ED setting prior to implementing opt-out testing.
2	**Cost-benefit** Cost-effectiveness has been instrumental in driving successful programs. Efforts should be made to understand the cost-effectiveness of implementing routine BBV testing in local context.
3	**Data collection, monitoring and evaluation** Systems should be in place to collect and measure operational and clinical factors to monitor the success of the BBV testing programme.
The Opt-out approach	
4	**Effectiveness** For optimal coverage and operational sustainability the adoption of an opt-out approach when implementing routine testing for blood borne viruses in emergency departments is recommended. It is suggested that local programs capture and monitor markers of clinical effectiveness.
5	**Patient and staff acceptability** Measures of patient and staff experience should be undertaken prior and during the implementation of BBV testing programs. Collected feedback should be used to inform and modify programme implementation to maximize acceptability and operational integration.
6	**Consent requirements** All BBV testing should be informed and align with medical core principles, but the opt-out approach is incompatible with requirement of written consent for testing.
7	**Patient information** Patient information should be made widely available in a variety of formats to inform ED attendees of BBV opt-out testing.
Operational coordination and logistics	
8	**Integration into the ED workflow** BBV opt-out testing should be integrated into existing ED workflows with minimal impact on ED staff efficiency. Opt-out testing should be implemented in ED settings where people are already having phlebotomy for other clinical reasons.
9	**Education and training** Prior and subsequent to implementation of BBV opt-out testing ED staff should receive training on the purpose, methodology and delivery of opt-out testing as well as the benefits of BBV testing.

10	**Lab & pathology** Laboratories involved in testing programs should be accredited for HIV and hepatitis B and C testing. Selection of tests for BBV programs should follow recommendations from ECDC and WHO.
11	**Key functions in patient pathway** The following key functions in the patient pathway from ED to care should be in place before implementing BBV opt-out testing in EDs: • Failsafe automatic reporting of all non-negative results to designated relevant parties • Delegation of results governance and linkage to care facilitation to appropriate local services outside the emergency department.

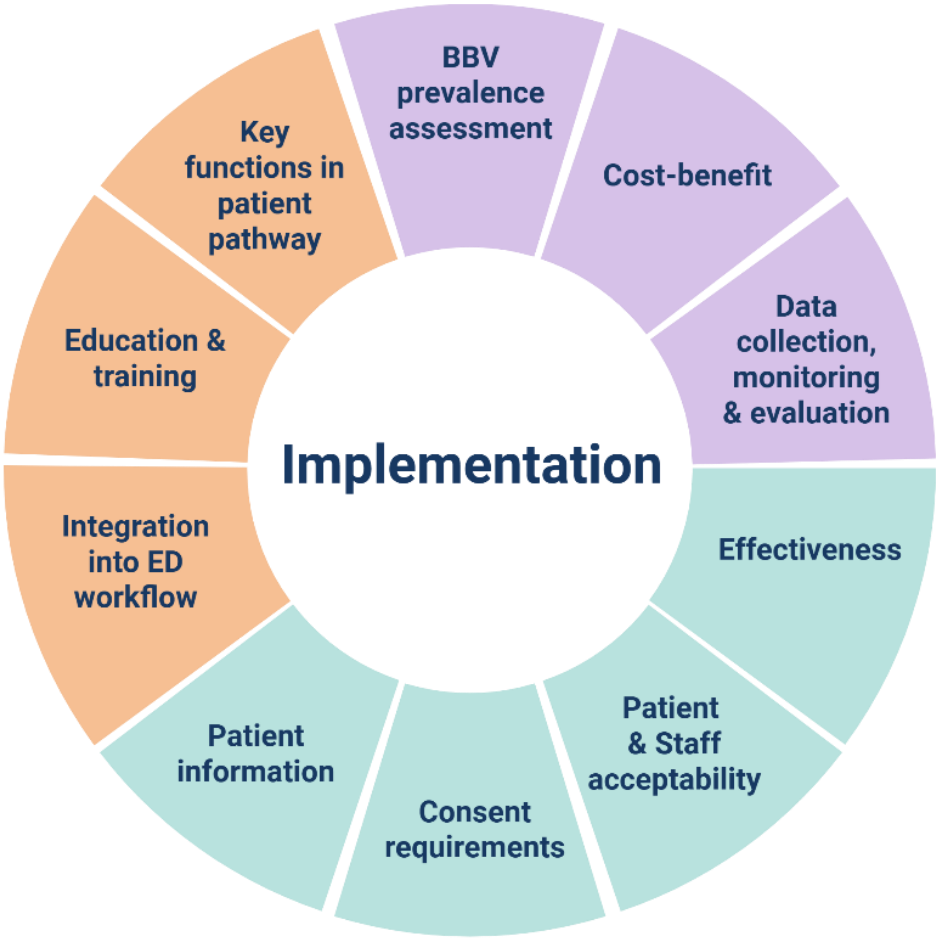
Requirements of healthcare systems and management

[This section is currently under development and will be informed by interviews with senior decision-makers, focusing on how BBV testing has been implemented in and the approaches used to secure political and organisational support for BBV testing programmes in different countries.]

Requirements of the emergency medicine speciality

[This section is currently under development and will be informed by interviews with emergency medicine physicians from across different European countries.]

Figure 2: Overview of the key steps to consider when implementing BBV opt-out testing in emergency departments.



(Created in BioRender. (2026) https://BioRender.com/oe1qopj)

Practice Recommendations

1 BBV prevalence assessment

We recommend: that efforts be made to understand the likely prevalence of undiagnosed blood borne viruses in the proposed ED setting prior to implementing opt-out testing.

We suggest this could be supported by:

- **Locally performed pilot studies**
- **Seroprevalence studies**
- **Using national data**
- **Using national or regional tools to inform estimates of undiagnosed prevalence**
    - **ECDC HIV Modelling tool**
- **Other methods are available as informed by local data which might include attendance fractions by risk groups or proportion of late diagnoses**

Current guidelines recommend that implementation of routine testing is determined by the local seroprevalence of an infection. Areas with high diagnosed prevalence are often associated with high levels of undiagnosed infection. In areas where local diagnosed BBV prevalence is high consideration should be given to routine testing of all adult patients who undergo blood tests in ED provided that adequate funding, laboratory capacity, and care pathways are in place to support diagnosis and follow-up. ECDC recommends systematic BBV screening in EDs in high-prevalence areas of HIV (≥1%) and in areas of intermediate or high prevalence of HBV and HCV (intermediate ≥ 2% and high ≥5%) [4].

In low BBV prevalence areas a targeted testing approach could be a more appropriate strategy such indicator condition guided testing where testing is offered to patients presenting with conditions associated with a higher prevalence of HIV [4, 7].

BBV prevalence has been assessed though pilot studies, anonymous seroprevalence studies, estimation from national data or mathematical modelling of proxy data [13-20].National or regional tools can also be used to inform estimates of undiagnosed prevalence. The ECDC HIV modelling tool are freely available from the ECDC Learning Portal. The platform uses routinely collected HIV surveillance data but require technical skills and support from national experts to operate [21]. Conducting scientific approaches such as pilot studies or seroprevalence surveys often demands substantial resources. As a pragmatic alternative, sites can estimate local BBV prevalence by leveraging readily available data such as the proportion of key populations in the area and the number of late diagnoses reported locally.

[Case study: C1]

2 Cost-benefit

We recommend: consideration of cost-effectiveness, which has been instrumental in driving successful programs.

Readers of this guidance may wish to consider efforts to understand the cost-effectiveness of implementing routine BBV testing in their own context. To do so we suggest the following inputs:

<u>Epidemiological variables:</u>

- **Estimated local undiagnosed BBV prevalence**
- **ED attendance**
- **Test coverage rate**
- **Test positivity**
- **Numbers needed to test**

<u>Cost of testing:</u>

- **Cost of tests**
- **Cost of confirmatory test (HIV & HCV)**

<u>Cost of linkage to care:</u>

- **Proportion needing linkage to care**
- **Contact rates**
- **Referral attendance**
- **Treatment costs**
- **Disease progression**
- **Treatment uptake**
- **Monitoring**

<u>Staff expenses</u>

- **Results administration**
- **Project management**
- **Clinical leadership**
- **Training and education**

<u>Potential savings:</u>

- **Cost associated with late presentation & admissions**
- **Savings from prevention and onward transmission (estimated new cases prevented by each new diagnosis and lifetime cost of a patient with BBV)**

Testing in healthcare settings is often opportunistic. For patients already undergoing blood tests for other reasons the additional cost for HIV, HBV and HCV testing is relatively small. When the undiagnosed prevalence is known or can be reliably estimated, it becomes possible to identify areas where routine testing would be most cost-effective. These decisions should also consider local factors such as epidemiological patterns, available infrastructure, and financial feasibility [4].

Cost-effectiveness analyses from various European countries have identified prevalence thresholds for implementing routine BBV screening in EDs. However, comparing these results across countries is challenging as parameters included in the economic analyses such as epidemiology, testing and treatment costs are likely to vary across countries and different health care systems.

Based on results from two long-term studies from the UK opt-out testing was found to be cost-effective if the HBsAg prevalence was 0.25% or above, and the HCV RNA prevalence 0.49% or above [22].

In France routing screening for HIV has been found to be cost-effective when the background prevalence rate of undiagnosed HIV infection is greater than ≥0.1% [23] and when the local HCV prevalence amongst ED attendees remain higher than in the general population (0.3%)[24].

In an Italian study a prevalence threshold analysis showed that at a prevalence threshold at 0.25% HIV universal testing will be cost-effective compared with indicator condition guided testing [25].

Findings from a recent study from Germany suggest that ED-based combined BBV opt-out testing in high-prevalence areas could offer greater health benefits and substantially improve value for money than the current testing strategy in EDs. ED BBV opt-out testing was estimated to be cost-effective at a combined BBV prevalence of 1.5% [26].

Based on review of studies a list of parameters to consider for local cost-benefit analysis was developed including: epidemiological variables, cost of testing, cost of linkage to care, staff expenses and the potential savings [22-25, 27, 28].

3 Data collection, monitoring and evaluation

We recommend: that systems are in place to measure a number of operational and clinical factors to monitor the success of the BBV testing programme

We suggest considering collection and monitoring of the following metrics:

Markers of operational effectiveness

- **Total number of attendees**
- **Total number of eligible patients**
- **Total number of tests performed by each BBV**
- **Number of positive tests and confirmatory tests**
- **Status: New positives, known positives, LTFU**
- **Site of diagnosis**
- **Linkage to care (proportion contacted, timeliness, linkage to care outcomes)**
- **Refusal/opt-out rate**

Markers of clinical effectiveness

- **Engagement in care**
- **Re-engagement in care**
- **BBV risk factors**
- **History of BBV testing**
- **Clinical characteristics (CD4, HIV viral load, fibrosis stage, routine laboratory values including serum aminotransferase levels)**
- **Demographic characteristics (age, gender, ethnicity, IMD, exposure)**
- **Comparison data for other sites testing for BBVs**

European guidelines emphasise that data collection, monitoring and evaluation is an essential component of any effective testing programme. Monitoring and evaluation of key operational and clinical indicators permit continuous re-evaluation of targets as well as assessment of programme effectiveness, efficiency and impact [4]. These markers enable services to detect workflow challenges and gaps in pathways and are essential in planning improvements and ensuring continuous optimisation of the programme.
Acknowledging the difficulty of monitoring the performance of BBV testing programmes due to potential gaps and different degree of data availability the above list of metrics is based on data captured in pilot studies across Europe [19, 20, 29-49].
Data should be captured through hospital information systems that are fit for purpose and GDPR compliant.

In the UK the UK Health Security Agency (UKHSA) and partners set up a comprehensive data, monitoring and evaluation framework to support the project. An interim reporting template was used across all involved UK sites including data items from multiple hospital systems (laboratory information management systems, electronic patient records and local clinic service systems)[6].

In order to evaluate the impact and effectiveness of the programme and potential inequalities in uptake of BBV testing and linkage to care, data has been collected from multiple sources including National Emergency Care Data Set, NHSE BBV opt-out testing in ED programme dashboards and sentinel surveillance of bloodborne virus testing in England [50].
Availability of both programmatic and routine surveillance data has enabled deduplication of records, linking outcomes from ED attendance to BBV testing, and linkage to care. Linking to past diagnoses also allow distinguishing new cases from previously diagnosed individuals [50].

A more detailed description of the NHSE BBV opt-out testing in ED programme dashboards used to capture programmatic data are given in case study C2.

[Case study: C2]

4 Measures of effectiveness

We recommend: the adoption of an opt-out approach when implementing routine testing for blood borne viruses in emergency departments for optimal coverage and operational sustainability.

We suggest considering capturing the following data for local programs to demonstrate the clinical effectiveness:

- **Previous BBV testing behaviour (proportion of first test ever, time since last test)**
- **Which new diagnoses would have been missed with the adoption of a risk-based and indicator condition guided testing approach**
- **CD4 count for new HIV diagnoses**
- **Fibrosis assessment for new viral hepatitis diagnoses**

International guidelines from ECDC and WHO recommend routine offer of testing for BBV in hospital settings, including EDs, in high-prevalence areas. Universal test offer in areas of intermediate or high prevalence can effectively increase testing coverage and diagnose infection in healthcare settings [4, 7].
Opt-out testing in EDs and other acute medical settings is also consistent with UK testing guidelines from National Institute for Health and Care Excellence, RCEM and BHIVA/BASHH/BIA for areas of high HIV prevalence. This approach follows the successful antenatal screening programs for BBVs and syphilis [51].

A systematic review of BBV testing in ED in Europe shows that testing uptake using an opt-out approach especially in combination with automated test ordering systems are associated with a higher uptake than opt-in and risk-based testing [52].
Three studies from the UK and one study from Spain report large increases in testing coverage after implementing an opt-out testing approach in ED [30, 33, 53, 54].

The final report for the first wave of the UK ED BBV opt-out testing programme looking at data from 2022 - 2024 concludes that the programme was successful in accessing people who did not have a previous record of a BBV test. Overall, 62.8% of eligible attendees had previously not been tested for any BBV (68.1% for HIV, 76.3% for HCV, and 74.8% for HBV) [12]. In addition, 5 studies from the UK, Ireland and Spain show that local programs have been successful in reaching individuals who have never been tested for BBVs before[20, 33, 43, 55, 56].

People newly diagnosed through the UK testing programme reported different routes of acquisition or risk factors to people diagnosed in other settings, reflecting the success of the opt-out testing approach in diagnosing people compared to more traditional settings [12]. Fifteen European studies identified new BBV diagnoses in individuals with no indicator conditions or risk factors which would have been missed with a targeted testing approach [30-33, 43, 49, 55, 57-64].

[Case study: C3]

5 Patient and staff acceptability

We recommend: that measures of patient and staff experience are undertaken prior and during the implementation of BBV testing programs and that the collected feedback is used to inform and modify programme implementation to maximize acceptability and operational integration.

The readers of this guidance would want to consider the following methods for assessing patient and staff acceptability:

- **Questionnaires**
- **Online surveys**
- **Semi-structured interviews**
- **Focus groups**

Multiple European studies have looked into patient and ED staff acceptability of routine BBV testing in ED using questionnaires, online surveys, semi-structured interviews and focus groups.

Studies from UK, Switzerland and Spain demonstrate a very high level of patient acceptability of both routine testing for HIV (70-85%) and HIV testing in ED settings (72-96 %). Main reasons seen for patients declining a BBV test in ED include having tested recently, not perceiving themselves at risk and other health concerns related to ED visit. [20, 40, 42, 46, 65, 66].

Several studies from the UK have explored staff experience of implementation of BBV opt-out testing programs in EDs. These studies consistently report high acceptability of both BBV testing in ED and the opt-out testing approach [20, 34, 65, 67-71].
Active staff engagement in program implementation and ongoing evaluations, combined with regular training sessions on BBV testing, positively influenced acceptance and understanding of the overall purpose of the testing intervention. Many staff members found it easier to offer BBV testing as part of routine policy rather than relying on clinical suspicion.
Key barriers to implementation reported include heavy workloads, competing priorities within the ED environment, and a perceived low risk of blood-borne viruses among ED patients.

[Case study: C4]

6 Consent requirements

We recommend: That all BBV testing should be informed and align with medical core principles, but we note that the opt-out approach is incompatible with requirement of written consent for testing.

We acknowledge the diversity of consent requirements for BBV testing across the European region and readers of this guidance need to be aware of the specific national testing policies within their setting before implementing BBV screening.

Testing should adhere to core principles of medical ethics and always be voluntary, confidential and contingent on informed consent. However, best practice guidance from WHO and ECDC no longer recommend written consent for BBV testing and individualised risk assessment and pretest counselling is no longer considered standard practice [4, 7].

A survey conducted by EuroTEST in 34 countries within the WHO European region provides an overview of legal and policy frameworks for blood borne virus testing consent requirements in Europe. The survey was disseminated to clinical and community-based testing facilities, national public health institutions and HIV/hepatitis organisations/societies [72].
Survey responses indicate that written consent or documented verbal consent remained a requirement for HIV testing in 22 countries. Written consent was a legal and policy requirement in 8 of the countries and documented consent a legal requirement in 2 and a policy requirement in 4. Written or documented consent for HIV was more often a legal or policy requirement in central and eastern European countries. For viral hepatitis, testing consent requirements were less strict in most countries and with opt-out testing being much more common for viral hepatitis than HIV testing. Several survey respondents noted that written consent and pre-test counselling require significant resources, limiting providers ability to test widely, especially in busy non-specialist settings like ED. Due to persistent HIV-related stigma in healthcare settings and mistrust of government facilities among individuals engaged in criminalized behaviours (e.g., drug use, sex work, undocumented migration), requiring a signed form creates a barrier that likely reduces testing uptake.
Survey results highlight the need for countries to initiate national level discussions and initiatives involving key stakeholders on to revise outdated legislation and guidance requiring written consent for HIV testing [72].

Case study C5 show an example from Spain where a revocable consent model was applied where patients received HCV screening information at admission and could choose to opt out via a revocation form.

[Case study: C5]

7 Patient information

We recommend: that patient information is made widely available in a variety of formats to inform ED attendees of BBV opt-out testing.

We suggest that the following information could be included in the patient information:

- **Epidemiological and health reasons for BBV screening in ED**
- **Opt-out test procedure and how to opt-out**
- **How will testing results be provided**
- **What do the different results mean**
- **Clarification of window periods**
- **Information regarding post-test discussion**

Examples of different patient information formats used in BBV opt-out testing:

- **Posters**
- **Leaflets**
- **Banners**
- **Verbal information provided by staff using a standard script**
- **Verbal reminders at blood draw**
- **Newspaper ad**
- **Digital information (video, tablet)**
- **Social media channels**

Following international guidelines appropriate information should be available before and after testing. It is considered sufficient to provide information on BBV opt-out testing in ED waiting rooms through a range of written and visual materials [4, 7].
Some people may require additional support and information before they are tested. UK guidelines on opt-out testing recommend translating patient information into the most spoken languages locally and to have paper large print versions available for partly sighted [51, 73].
In European studies a wide variety of patient information formats have been used. Patient information focused on the purpose and benefits of BBV testing, the opt-out testing strategy and instructions on how to opt-out of testing and how test results will be provided [19, 31, 34, 38, 41, 42, 44, 47, 48, 55, 64, 65, 68, 74-76].

Please find different examples of patient information on BBV opt-out testing in Annex 4.

[Case study; C6]

8 Integration into the ED workflow

We recommend: implementing BBV opt-out testing in ED settings where people are having phlebotomy for other clinical reasons to ensure optimal integration in ED workflow.

In order for programs to be successful the readers of this guidance may wish to consider how testing programs can be integrated into the ED workflows with minimal impact on ED staff efficiency.

We suggest considering the following interventions for optimal integration of BBV testing programs in ED workflow:

- **Use of automated BBV test requesting have proven specifically successful for obtaining a high uptake of BBV testing. Time dependant blocking of duplicate testing should be considered to minimise unnecessary repeat testing in people who attend the ED frequently.**
- **Close collaboration across speciality teams involved**
- **BBV tests offered and performed by existing ED staff**
- **Training of ED staff by specialist services**
- **Appointing key staff to lead on training and updates**
- **Providing patient information on opt-out testing offered through a variety of media**
- **Early involvement of laboratories to ensure capacity**
- **Diversifications of sample types for BBV opt-out testing e.g. using vials with another colour**

BBV screening programs have been implemented in emergency departments across Europe using a variety of approaches. Some of these are described in detail in the case studies presented in Annex 2. The list of recommended interventions to consider for integration into the ED workflow builds on current UK guidelines and experience from the practical setups in European pilots and programs. For successful implementation, it is essential that BBV testing is embedded within existing ED processes, delivered by current staff, and designed to minimize any impact on efficiency or patient flow.

Especially the use of automatic BBV test requesting has proven effective in facilitating high testing uptake within ED settings [10, 29, 47, 50, 52, 69, 71, 74]. Through this approach the electronic ordering system automatically generates BBV tests alongside routine ED blood panels, eliminating the need for staff to manually request these. Automation helps overcome barriers related to stigma and risk

profiling, by reducing the influence of staff bias in determining who should be tested and supporting the normalisation of BBV testing as part of routine care.
Guidelines further recommend “blocking” within a set time period to prevent unnecessary repeat testing incurring extra cost and time [73].

Successful implementation of BBV opt-out testing in emergency departments relies on strong collaboration across all involved teams. Coordinated efforts help align protocols, address operational challenges, and maintain consistent support and communication allowing issues to be resolved quickly and continuous modification of the testing programme.

For detailed information and recommendations on patient information, staff training, and laboratory processes, please refer to the relevant sections in this document.

In case study C7 and C8 the authors assessed how different interventions can contribute to a sustainable model for delivering testing using the methodology for improvement model Process Mapping. Interventions are evaluated through plan-do-study-act (PDSA) cycles examining the impact on test offer and test uptake. Interventions studied included: training exercises, identification of key staff /testing champions, incentivization, information technology solutions, and changes to the testing pathway and methodology [45, 67].

[Case studies C7, C8]

9 Education and training

We recommend: that prior and subsequent to implementation of BBV opt-out testing ED staff should receive training on the purpose, methodology and delivery of opt-out testing as well as the benefits of BBV testing.

We suggest introducing:

- **An iterative approach to assess and improve delivery of training interventions**
- **Incorporation of lived-experience stories from patients diagnosed through opt-out testing in training sessions**
- **Frequent, short and easily accessible training sessions to help maintain awareness of testing programme and sharing experience from other local ED testing projects.**
- **Identification of BBV testing champion or other key individuals to lead on updates and training, maintain momentum and support ED staff during implementation**
- **Training and involvement of nursing staff in testing service**
- **Regular feedback on local programme performance: number of BBV tests conducted and new diagnoses**

Education and training of healthcare personnel are essential for making BBV testing routine and reducing barriers to offering tests [4, 7]. Guidelines recommends that all ED personnel should be provided with training to carry out routine opt-out BBV testing, understand the rationale behind the testing strategy, how to ensure testing is avoided when a person wish to opt-out and how to direct patients to further information [51, 73]. Furthermore, guidelines recommend all hospital staff, including administrative and support staff, should be trained to recognize and address stigma and discrimination associated with HIV, HBV, and HCV, particularly among populations at increased risk [4, 7, 77].

Studies examining staff perspectives on implementation of BBV opt-out testing all identify a need for training among ED staff and highlights training as a key component in ensuring staff engagement [20, 43, 65, 68-71, 78]. In European studies staff training has been delivered using a range of different formats including educational lectures, hands-on practice, Q&A sessions and briefings at ED handover. Training has focused on the purpose of the testing intervention, the opt-out methodology, test results procedure and benefits of testing [13, 19, 20, 32, 34, 37, 42, 43, 45, 53, 62, 67, 71, 79-81]. What has proven important in ensuring ED staff buy-in in a busy working environment is delivery of repeated short training interventions, frequent feedback on local results and the incorporation of personal narratives of participants diagnosed through the BBV opt-out programmes [71].

Please find repository of materials used for staff training in Annex 5.

[Case study C7]

10 Pathology and laboratory

We recommend: engagement of laboratories that are accredited for HIV and hepatitis B and C testing. Selection of tests for BBV programs should follow recommendations from ECDC and WHO.

We suggest to consider the following:

- **Early involvement of laboratories to ensure capacity for BBV opt-out testing**
- **If BBV tests can be conducted on a serum biochemistry sample for simplicity, or whether a separate serum sample is required**

Successful implementation of BBV opt-out testing in emergency departments depends on early and close engagement with diagnostic laboratories. Laboratories play a critical role in determining feasibility, test selection, sample requirements, turnaround times, and result reporting pathways. Involving laboratory services at an early planning stage helps ensure that testing capacity and workflows, are aligned with the anticipated testing volume and clinical context of the ED [6].

BBV testing should be conducted by accredited laboratories. Selection of assays for HIV and hepatitis B and C testing should follow current ECDC and WHO recommendations, ensuring high diagnostic accuracy, appropriate confirmatory algorithms, and compliance with regulatory requirements [4, 7, 77].

Where possible, programmes should assess whether BBV testing can be performed using existing serum samples collected for routine biochemistry, as this can simplify workflows [51]. The need for separate samples, reflex testing, or confirmatory procedures should be clearly defined and agreed with the laboratory in advance [73].

11 Key functions in patient pathway

We recommend: that the following key functions in the patient pathway from ED attendance to care are in place before implementing BBV opt-out testing in EDs:

- **Failsafe automatic reporting of all non-negative results to designated relevant parties**
- **Delegation of results governance and linkage to care facilitation to appropriate local services outside the emergency department.**

We suggest the readers of this guidance to consider the following:

- **Using a "no news is good news" approach as an appropriate method for management of negative test results**
- **How to handle indeterminate results and situations where testing could not be performed e.g. underfilled vials**
- **Offering community and peer support to help engage patients in care**

Current guidelines from the UK recommend establishing failsafe automatic reporting of all non-negative results for ED BBV testing and the delegation of results management to specialist services outside the ED [51, 73].

These recommendations are reinforced by implementation experiences from BBV ED testing programs across Europe. Studies describe various failsafe reporting methods to ensure all non-negative results are acted upon, including automatic electronic notifications, secure emails, and daily reporting lists sent directly to specialist teams. Some also report cross-checking weekly and monthly failsafe lists for added assurance [30, 31, 34, 43, 44, 47, 74, 76, 82, 83].

Several studies also describe the delegation of results management to specialist services including infectious disease specialist teams, local sexual health services or dedicated BBV linkage to care coordinators or teams [5, 13, 20, 29-36, 38, 40, 41, 43-45, 47, 48, 61, 63, 75, 82, 83]. In case study C9 a coordinating hepatologist was responsible for evaluating medical records for participants with a positive result and referring them to care.

Several studies report using a "no news is good news" approach as an appropriate method for management of negative test results. Local SOPs should specify how to handle indeterminate results and situations where testing could not be performed on blood samples [73].

Sites can consider the use of peer and community support to help newly diagnosed people engage in care[51, 73]. Case study C10 describes how a comprehensive linkage network connecting existing services allowed linkage to care for traditionally poorly served, at-risk groups that would not otherwise have been possible [29].

[Case study C9 and C10]

Requirements of healthcare systems and management

The users of this guidance may wish to consider some of the following points before implementing BBV screening in EDs:

- Policy support: successful development and implementation of BBV testing services will require political commitment to overcome regulatory and financial barriers
- Stakeholder engagement: Involvement of patient organisations, risk groups, and other relevant stakeholders early in the planning process to build trust and ensure programme meets community needs
- Integrated Healthcare Systems: Establishment of clear referral pathways to connect individuals diagnosed through BBV screening with appropriate clinical care and support services
- Funding of testing program: Assess the costs associated with BBV screening and work to eliminate financial barriers to both testing and subsequent treatment.
- Establishing a networked approach across different specialist teams involved
- Management and leadership oversight of testing program
- Resource allocation to key implementation areas (staff training, laboratory, results management, linkage to care, data collection and monitoring)
- Development of SOPs including end to end clinical pathways and data process flows with clear lines of responsibility
- Monitoring of local programme progression and impact on capacity

[This section is currently under development and will be informed by interviews with senior decision-makers, focusing on how BBV testing has been implemented in and the approaches used to secure political and organisational support for BBV testing programmes in different countries.

If you have suggestions for important considerations that should be included in this section, we would highly welcome your input.

Please provide your input through the public consultation of this guidance]

Requirements of the emergency medicine specialty

[This section is currently under development and will be informed by interviews with emergency medicine physicians from across different European countries.

If you have suggestions for important considerations that should be included in this section, we would highly welcome your input.

Please provide your input through the public consultation of this guidance.]

Annex 1: Advisory group

European Organisations

- Juliana Reyes, ECDC
- Loreta Kondili, EASL
- Deniz Gökengin, IUSTI

Infectious Diseases

- Michael Rayment, Chelsea and Westminster Hospital, UK
- Ann Sullivan, Chelsea and Westminster Hospital, UK
- Rachel Hill-Tout, NHS, UK
- Daniel Bradshaw, UKHSA, UK
- Juan Carlos Ruiz Cobo, Hospital Universitari Vall d'Hebron, Spain
- Anny Camelo Castillo, University Hospital Torrecárdenas, Spain
- Hartmut Stocker, St. Joseph Hospital ED, Germany
- Jürgen Rockstroh, University of Bonn, Germany
- Raimonda Matulionyte, Vilnius University, Lithuania

Emergency Medicine

- Hartmut Stocker, St. Joseph Hospital ED, Germany (ID)
- Emma Young, Barts Health Trust, UK

Data

- Rachel Roche, UKHSA, UK
- Tamara Djuretic, UKHSA, UK

Patient organisations

- Cary James. World Hepatitis Alliance

Annex 2: Case studies

A range of case studies illustrating different ways and steps of implementing BBV routine testing in ED have been selected through the literature review and subsequent meetings with the advisory group.

[*The writing group is in the process of reaching out to authors of the selected case studies to collect further information.]*

C1; HIV/HCV/HBV testing in the emergency department: a feasibility and seroprevalence study

Authors: D Bradshaw, C Rae, M Rayment, N Turner, R Turner, G Pickard, K Pillay, P Roberts, M Foxton and AK Sullivan

Affiliation: Chelsea and Westminster Hospital NHS Foundation Trust, London, UK, Imperial College Healthcare NHS Trust, London, UK

Country: UK

Description:
In order to decide whether or not a prospective testing program for HCV and HBV would be worthwhile, a retrospective, unlinked anonymous seroprevalence survey was performed in the ED of Chelsea and Westminster hospital, London.
500 randomly-selected, irreversibly-unlinked samples from individuals who had tested HIV-negative as part of an ED testing program were tested for anti-HCV IgG and hepatitis B surface antigen (HBsAg). 15 (3.0%) were HCV IgG-positive and 8 (1.6%) were HBsAg positive. Authors found high prevalence with respect to the UK national average (0.4% and 0.3% respectively), a pilot BBV testing program was undertaken as part of routine clinical care.

Source: Journal article [13]

C2: NHS England Data Dashboards

Authors: NHS England

Country: UK

Description:
As part of the UK emergency department BBV opt-out testing programme, national dashboards were developed by NHS England to support monitoring, quality improvement, and accountability across participating sites. The dashboards provide near real-time data on key indicators, including testing coverage, positivity rates for HIV, hepatitis B and C, and outcomes along the linkage-to-care pathway. Dashboards report aggregated data for programme metrics and is updated monthly.

Data are submitted routinely by sites and displayed in a standardised format, allowing local teams to track their own performance over time and compare implementation across regions.

The dashboards can be used by clinical teams and hospital management to identify variation, highlight good practice, and address operational challenges such as low test uptake, delays in reporting results, or gaps in linkage to care.

The NHSE dashboards have been a critical enabler of rapid scale-up and programme oversight, supporting a data-driven approach to implementation while minimising additional reporting burden for emergency departments.

Source: Public health evaluation of BBV opt-out testing in EDs in England, 33-month final report 2025 [12].

C3: High-level compliance to opt-out HIV testing in the emergency department of a large teaching hospital using the biochemistry sample as the sample type for HIV screening

Authors: Rebecca Marchant, Anne Patterson, Bojana Dragovic, Bernard Kelly, Lisa Hamzah, Melissa Hempling

Affiliation: Central and North West London NHS Foundation Trust, London, UK and St George's University Hospital NHS Foundation Trust, London, UK

Country: UK

Description:
First 3-year results from HIV ED testing programme. Routine ED HIV testing was implemented in ED initially using an opt-in approach. The program was changed to an opt-out approach after 4 months. HIV testing was added to all ED blood test order sets and was performed on the biochemistry samples of those aged 18–59 years. The age range was extended to include those aged 16+ years along with a shift to notional consent.
Utilizing the novel method of HIV testing on biochemistry samples the programme demonstrated a 69.5% uptake of HIV testing in the ED.
During the initial 4-month period of opt-in HIV testing, uptake was low on average 57.9% despite it being well-publicized among staff and patients. Following the change to an opt-out approach and inclusion of HIV tests in ED blood order sets, uptake improved to a sustained average of 69 % over the next 32-month period, uptake increased to 74.2% after age range was extended to 16+ years and a shift to notional consent.

Source: Journal article [33]

C4: 'Just another vial…': a qualitative study to explore the acceptability and feasibility of routine blood-borne virus testing in an emergency department setting in the UK

Authors: Lucy Cullen, Pippa Grenfell, Alison Rodger, Chloe Orkin, Sema Mandal, Tim Rhodes

Affiliation:
Department of Public Health, Environments and Society, Faculty of Public Health and Policy, London School of Hygiene and Tropical Medicine, London, UK
National Institute for Health Research (NIHR), Health Protection Research Unit (HPRU) in Blood Borne and Sexually Transmitted Infections, London, UK

Country: UK

Description:
Both patients and staff participants were recruited to explore the multiple dimensions of test expectation and experience. Patient participants were sampled from individuals accessing ED services who had bloods taken as part of their care and included:

- Individuals who were offered and accepted the BBV test
- Individuals offered the test but who chose to opt out
- individuals who did not recall being offered testing and assumed not tested

Health professionals were sampled from staff members directly involved in taking bloods and implementing the test intervention and included:

- women and men of different staff grades, who had worked at the department for between 3 and 8 years

Interview discussions were semi-structured, shaped by a topic guide developed by the research team but also guided by participants' responses. Interview participants were asked about their views and direct experiences of the test intervention:

- Previous test experiences and current test practices
- Knowledge and awareness of HIV, HCV and HBV viruses
- Transmission risks and treatments
- Felt and perceived barriers and facilitators to BBV testing
- Felt appropriateness of the ED as a site for testing

Study findings indicate that routine opt-out BBV testing in the ED setting is viewed as an acceptable and valuable practice by the majority of patient and staff participants.

Source: Journal article [65]

C5: **Use of revocable consent for HCV testing in ED setting in Spain.**

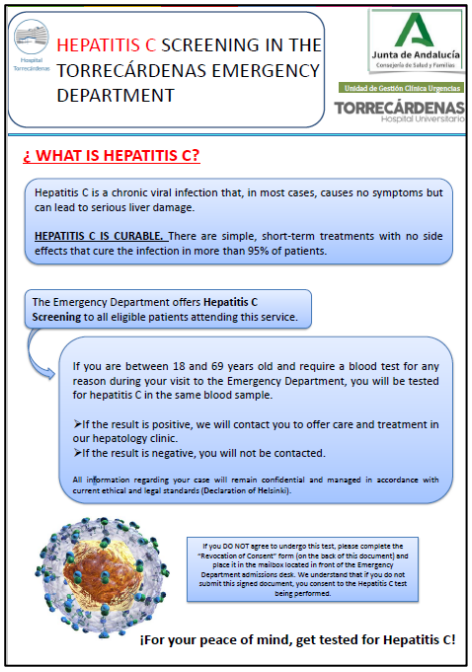
Authors: Anny Camelo-Castillo, Teresa Jordán Madrid, Teresa Cabezas Fernández
Affiliation: Hospital Universitario Torrecárdenas, Almería, Spain
Country: Spain

Description:
The study team used a revocable consent model aligned with Spanish legal frameworks. At admission, administrative staff provided patients with a leaflet containing information on HCV infection, transmission, screening rationale, and treatment options. On the reverse side was a revocation form for patients who did not wish to participate.
The form could be filled in and deposited in a designated mailbox at the admissions area. To ensure proper documentation, once the information leaflet was delivered, a checkbox was automatically marked in the electronic admission system.
Before proceeding with HCV testing, staff verified that no revocation had been recorded for the patient.

Many patients diagnosed with active HCV through this programme had no recorded risk factors or

presented with non-specific symptoms and would likely have been missed by risk-based testing alone. Strong linkage-to-care pathways, including rapid contact and direct referral to hepatology, were essential to translate diagnosis into treatment and cure.

Patient information and revocable consent form used in study:


HEPATITIS C SCREENING IN THE TORRECÁRDENAS EMERGENCY DEPARTMENT

Junta de Andalucía

Unidad de Gestión Clínica Urgencias

TORRECÁRDENAS Hospital Universitario

¿ WHAT IS HEPATITIS C?

Hepatitis C is a chronic viral infection that, in most cases, causes no symptoms but can lead to serious liver damage.

HEPATITIS C IS CURABLE. There are simple, short-term treatments with no side effects that cure the infection in more than 95% of patients.

The Emergency Department offers **Hepatitis C Screening** to all eligible patients attending this service.

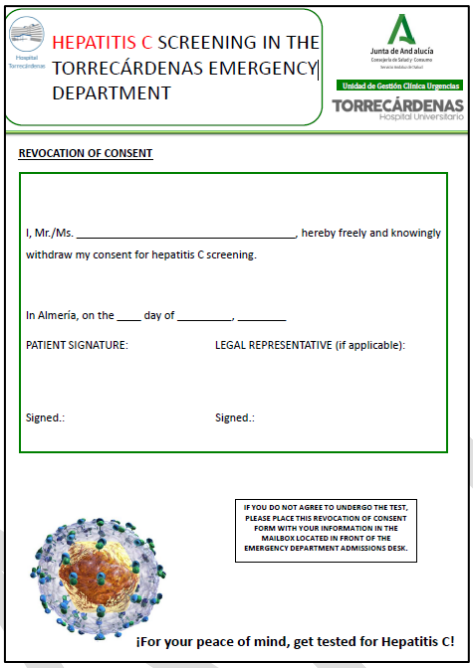
If you are between 18 and 69 years old and require a blood test for any reason during your visit to the Emergency Department, you will be tested for hepatitis C in the same blood sample.

➢If the result is positive, we will contact you to offer care and treatment in our hepatology clinic.
➢If the result is negative, you will not be contacted.

All information regarding your case will remain confidential and managed in accordance with current ethical and legal standards (Declaration of Helsinki).

If you DO NOT agree to undergo this test, please complete the "Revocation of Consent" form (on the back of this document) and place it in the mailbox located in front of the Emergency Department admissions desk. We understand that if you do not submit this signed document, you consent to the Hepatitis C test being performed.

¡For your peace of mind, get tested for Hepatitis C!


HEPATITIS C SCREENING IN THE TORRECÁRDENAS EMERGENCY DEPARTMENT

Junta de Andalucía

Unidad de Gestión Clínica Urgencias

TORRECÁRDENAS Hospital Universitario

REVOCATION OF CONSENT

I, Mr./Ms. _____, hereby freely and knowingly withdraw my consent for hepatitis C screening.

In Almería, on the ____ day of _____, _____

PATIENT SIGNATURE: LEGAL REPRESENTATIVE (if applicable):

Signed.: Signed.:

IF YOU DO NOT AGREE TO UNDERGO THE TEST, PLEASE PLACE THIS REVOCATION OF CONSENT FORM WITH YOUR INFORMATION IN THE MAILBOX LOCATED IN FRONT OF THE EMERGENCY DEPARTMENT ADMISSIONS DESK.

¡For your peace of mind, get tested for Hepatitis C!

Source: Journal article [60] and correspondence with authors.

C6: **Opportunistic screening for hepatitis C virus infection in an emergency department in Almeria, Spain**

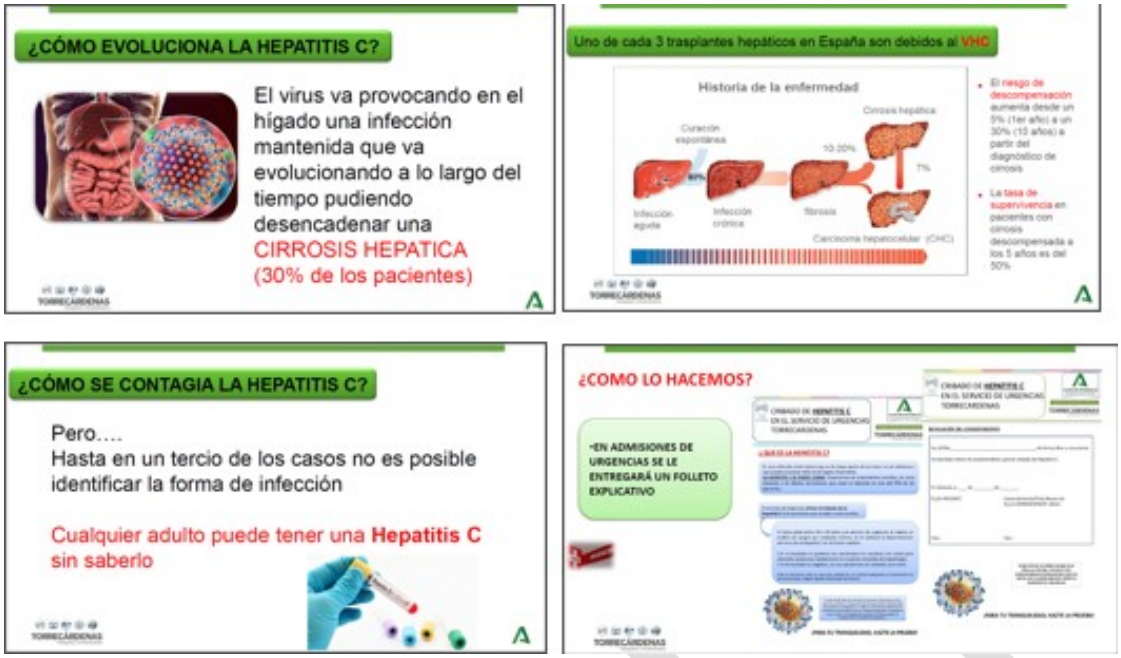
Authors: Anny Camelo-Castillo, Teresa Jordán Madrid, Teresa Cabezas Fernández
Affiliation: Hospital Universitario Torrecárdenas, Almería, Spain
Country: Spain

Description:
The study team developed an informative video presentation on HCV including information on:

- Symptoms
- Routes of transmission
- ED screening strategy, and available treatment

The video was continuously shown on screens in ED waiting rooms, enhancing patient education and reinforcing transparency.

A key lesson from the programme was that embedding screening into routine clinical workflows using remnant blood samples and a simple opt-out information strategy enabled implementation without disrupting emergency department activity.



Source: Journal article [60] and correspondence with authors

C7: Routine HIV testing in the emergency department: tough lessons in sustainability

Authors: M Rayment, C Rae, F Ghooloo, E Doku, J Hardie, S Finlay, S Gidwani, M Atkins, P Roberts, AK Sullivan

Affiliation: Directorate of HIV/GU Medicine, Chelsea and Westminster Hospital NHS Foundation Trust.

Country: UK

Methodology: Sustainability methodology - Process mapping: plan-do-study-act (PDSA)

Description:
Using the sustainability methodology known as Process mapping: plan-do-study-act (PDSA) the study evaluates the success of an implemented HIV testing programme in ED and assessing how different interventions can contribute to a sustainable model for delivering testing.

Interventions were planned based on stakeholder input. Interventions were implemented and thereafter the impact on key outcome measures were examined.

Key outcome measures:

- the proportion (%) of eligible patients offered an HIV test
- the proportion (%) of patients accepting an HIV test

Interventions included: training exercises, identification of key staff /testing champions, incentivisation, information technology solutions, and changes to the testing pathway and methodology.

The ED and sexual health teams met weekly to evaluate the effectiveness of the testing service.

Interventions that proved to have the biggest impact were:

- Switch to offer blood testing in addition to oral fluid-based testing
- Training and involvement of nursing staff into the testing service

Source: Journal article [45]

C8: Improving detection of undiagnosed HIV through routine screening in a central London emergency department

Authors: Matilda Fox, Rosie Pettit, Ernest Mutengesa, Alice Harper, Maria Nakhoul

Affiliation: Emergency Department, Charing Cross Hospital, London, UK.

Country: UK

Methodology: Sustainability methodology - Process mapping: plan-do-study-act (PDSA)

Description:
The study team conducted a quality improvement project based on the Methodology for Improvement Model using process mapping: plan-do-study-act (PDSA) cycles to evaluate different interventions with the overall aim to increase HIV testing in ED attendees.

The study team met on a monthly basis to discuss updates and new ideas for implementation and ideas were based on behavioural insights. The team also contacted nearby hospitals where similar projects had been conducted, to gather ideas on sustaining observed changes.

Interventions for evaluation were focused around two areas:

- Targeted education of ED staff
- Ensuring easy and memorable methods of ordering tests was available to all staff.

PDSA cycle	Intervention	Impact on testing
PDSA 1	Distributing an anonymous survey to ED staff – awareness raising	12% rise in testing rate
PDSA 2 & PDSA 3	20min teaching session for all ED doctors & appointment of 'HIV advocate nurse'	8% rise in testing rate
PDSA 4	Creation of order prompt posters displayed them around ED	No change in testing rate
PDSA 5	'Gamified' teaching session for ED nurses	3% rise in testing rates
PDSA 6	HIV test added to care set	10% rise in testing rate

Source: Journal article [67]

C9: **Integrating viral hepatitis management into the emergency department: A further step towards viral hepatitis elimination**

Authors: Jordi Llaneras, Juan Carlos Ruiz-Cobo, María Buti and colleagues

Affiliation: Hospital Universitari Vall d'Hebron, Barcelona

Country: Spain

Description:
The study team implemented HBV and HCV testing in the hospital ED. Individuals aged >18 years attending the ED for a medical condition requiring a blood test were offered hepatitis B and C testing. HCV antibody and HBsAg were analysed in the same ED blood sample in all those who had not been tested for these markers in the previous 3 months.
Results obtained were encrypted and sent to the study coordinator, a hepatologist from the hospital Liver Unit that was in charge of review and validation. The coordinating hepatologist was responsible for referral to care. Medical records of participants with detectable HCV RNA or HBsAg were evaluated to determine their clinical, social, and functional status. After evaluation of each case, the study coordinator decided which patients were candidates for an outpatient consultation for evaluating HBV and HCV therapy and monitoring. Patients with treatment criteria were started on therapy at the first specialist visit to minimise the possibility of loss to follow-up

- HCV: 69 patients were considered candidate for treatment, 45 started treatment and 42 achieved SVR.
- HBV: 47 patient requiring linkage to care, 42 linked to care, 5 started treatment.

Having a hepatologist act as the screening coordinator was considered a key factor in facilitating fast and simple linkage to care and reducing the time from diagnosis to treatment.

Source: Journal article [31]

C10: VirA+EmiC project: Evaluating real-world effectiveness and sustainability of integrated routine opportunistic hepatitis B and C testing in a large urban emergency department

Authors: Gaia Nebbia, Murad Ruf , Laura Hunter

Affiliation:

- Department of Infection, Guy's and St Thomas' NHS Foundation Trust, London, UK.
- Gilead Sciences Ltd UK & Ireland, Medical Department, London, UK.
- Department of Emergency Medicine, Guy's and St Thomas' NHS Foundation Trust, London, UK

Country: UK

Description:

The study describes how linkage to care approaches were under constant review and evolved throughout the testing programme. A dedicated part-time research nurse was employed as care navigator to lead contacting of the patient

Process for contacting patients included:

- First contacted by telephone (2 attempts 24 h apart)
- Text message sent
- Letter was posted
- Notification of GP by post
- Electronic notes were left on hospital and ED re-attendance patient records.
- Hospital homeless teams checked community health records for contact details or GP details.
- Find and Treat team (UCLH NHS Trust) – A dedicated pan-London NHS community inclusion health outreach team. Uses peer-support coupled with bespoke pan-London homeless databases and links with shelters and charities to identify, contact and engage patients with care.

A comprehensive linkage network with better connection between existing services allowed care provision to traditionally poorly served, at-risk groups that would not otherwise be possible.

Source: Journal article [29]

Annex 3: Questions received from participants at special session at the EACS conference 2025

[*Questions and comments received at the special session at the EACS conference 2025 will be incorporated into the final draft of the implementation guidance together with feedback and input received through the public consultation.]*

	Questions
1	What is the lost to follow up rate of patients with a positive test?
2	Some patients return to the ED often. Do you retest every time? Yearly? Other recommendation?
3	Ideal opportunity to train healthcare workers on stigma?
4	Would a fast test with an immediate result improve the situation?
5	Why not include syphilis along with BBV testing?
6	Who is paying for the screening? Is it the hospital (as part of the ED diagnostics) or the government (because it is public health)?
7	Having all the indicator conditions of newly diagnosed HIV patients and do opt-out testing to these conditions do you think that this could be more difficult?
8	What safety mechanism have you put in place to ensure 1) no positive results are missed and 2) that people who have not consented aren't accidentally tested?
9	What was the prevalence of HIV and Hep B in the high prevalence areas?
10	How often do you recommend testing as A&E often has 'frequent flyers'?
11	If you use the ED with minimal patient and doctor interaction. Is it not better to do this at the lab directly?
12	How different was the HIV prevalence obtained by your group compared with the WHO prevalence?
13	Are there plans to roll out to psychiatric emergency wards?

Annex 4: Repository of patient information

[To support countries implementing BBV opt-out testing in ED, EuroTEST is creating an online repository of patient-facing information materials (e.g., posters, leaflets, scripts).

If your organisation would like to contribute, please use the online public consultation feedback form to provide organisational details and upload materials or contact EuroTEST at: eurotest.rigshospitalet@regionh.dk for more information.
All collected materials will be made publicly available to help guide future programmes. The plan is to offer translation of materials on demand.]

Poster used in the UK BBV opt-out testing programme developed by NHS England.

Annex 5: Repository training materials

[To support countries implementing BBV opt-out testing in ED, EuroTEST is creating an online repository of training materials used to train ED staff in BBV opt-out testing pilots and programmes.
If your organisation would like to contribute, please use the online public consultation feedback form to provide organisational details and upload materials or contact EuroTEST at: eurotest.rigshospitalet@regionh.dk for more information.
All collected materials will be made publicly available to help guide future programmes. The plan is to offer translation of materials on demand.]

References

1. ECDC. Progress towards reaching the Sustainable Development Goals related to HIV, viral hepatitis, sexually transmitted infections and tuberculosis in the EU/EEA: 2024 progress report. Stockholm: ECDC; 2025.

2. ECDC. Continuum of HIV care. Monitoring implementation of the Dublin Declaration on partnership to fight HIV/AIDS in Europe and Central Asia: 2023 progress report. Stockholm: ECDC; 2024.

3. WHO. WHO Global health sector strategies on, respectively, HIV, viral hepatitis and sexually transmitted infections for the period 2022-2030. Geneva: World Health Organization; 2022.

4. ECDC. Public health guidance on HIV, hepatitis B and C testing in the EU/EEA – An integrated approach. Stockholm; 2018.

5. Townsend L, Herraghty F, Brennan S, Grant C, Wang W, Moriarty A, et al. Outcomes 10 Years After Implementing an Emergency Department Opt-out Bloodborne Virus Screening Program. Open Forum Infect Dis. 2025;12(9):ofaf547.

6. NHSE. Emergency department opt out testing for HIV, hepatitis B and hepatitis C: The first 100 days. NHS England; 2022.

7. WHO. Consolidated guidelines on differentiated HIV testing services. Geneva: World Health Organization; 2024.

8. Branson BM, Handsfield HH, Lampe MA, Janssen RS, Taylor AW, Lyss SB, et al. Revised recommendations for HIV testing of adults, adolescents, and pregnant women in health-care settings. MMWR Recomm Rep. 2006;55(Rr-14):1-17; quiz CE1-4.

9. Schillie S, Wester C, Osborne M, Wesolowski L, Ryerson AB. CDC Recommendations for Hepatitis C Screening Among Adults - United States, 2020. MMWR Recomm Rep. 2020;69(2):1-17.

10. Simmons R, Plunkett J, Cieply L, Ijaz S, Desai M, Mandal S. Blood-borne virus testing in emergency departments - a systematic review of seroprevalence, feasibility, acceptability and linkage to care. HIV Med. 2023;24(1):6-26.

11. UKHSA. Public health evaluation of BBV opt-out testing in EDs in England: 24-month interim report. 2024.

12. UKHSA. Public health evaluation of BBV opt-out testing in EDs in England, 33-month final report 2025. 2025.

13. Bradshaw D, Rae C, Rayment M, Turner N, Turner R, Pickard G, et al. HIV/HCV/HBV testing in the emergency department: a feasibility and seroprevalence study. HIV Med. 2018;19 Suppl 1:52-7.

14. Drysdale K, Cutino-Moguel MT, Dakshina S, Dhairyawan R, Moloney J, Orkin C, et al. Going, Going, Gone? Routine emergency department Hepatitis C testing can drive elimination efforts. Data from a single UK urban centre show sustained significant decreases in Hepatitis C viraemia over time. Gut. 2022;71(Supplement 3):A89.

15. Hopkins MJ, Todd S, Beadsworth M, Anderson C, Mohamed Z, Muir D, et al. Consistent high prevalence of undiagnosed blood-borne virus infection in patients attending large urban emergency departments in England. Journal of viral hepatitis. 2020;27(1):88-91.

16. Orkin C, Leach E, Flanagan S, Wallis E, Ruf M, Foster GR, et al. High prevalence of hepatitis C (HCV) in the emergency department (ED) of a London hospital: should we be screening for HCV in ED attendees? Epidemiology and infection. 2015;143(13):2837-40.

17. Cremieux A-C, D'Almeida KW, de Truchis P, Simon F, le Strat Y, Bousquet V, et al. Undiagnosed HIV prevalence based on nontargeted screening in emergency departments. AIDS (London, England). 2012;26(11):1445-8.

18. Fingertips, Public Health profiles: Department of Health & Social Care; [Available from: https://fingertips.phe.org.uk/.

19. d'Almeida KW, Kierzek G, de Truchis P, Le Vu S, Pateron D, Renaud B, et al. Modest public health impact of nontargeted human immunodeficiency virus screening in 29 emergency departments. Archives of internal medicine. 2012;172(1):12-20.

20. Rayment M, Thornton A, Mandalia S, Elam G, Atkins M, Jones R, et al. HIV testing in non-traditional settings--the HINTS study: a multi-centre observational study of feasibility and acceptability. PloS one. 2012;7(6):e39530.

21. ECDC. HIV Modelling Platform: ECDC; [Available from: https://learning.ecdc.europa.eu/course/view.php?id=919.

22. Williams J, Vickerman P, Smout E, Page EE, Phyu K, Aldersley M, et al. Universal testing for hepatitis B and hepatitis C in the emergency department: a cost-effectiveness and budget impact analysis of two urban hospitals in the United Kingdom. Cost effectiveness and resource allocation: C/E. 2022;20(1):60.

23. Yazdanpanah Y, Sloan CE, Charlois-Ou C, Le Vu S, Semaille C, Costagliola D, et al. Routine HIV screening in France: clinical impact and cost-effectiveness. PLoS One. 2010;5(10):e13132.

24. Noiriel N, Williams J. Early cost-utility analysis of hepatitis C virus testing for emergency department attendees in France. PLOS global public health. 2023;3(2):e0001559.

25. d'Arminio Monforte A, d'Ettorre G, Galardo G, Lani E, Kagenaar E, Huntington S, et al. Estimating the potential health economic value of introducing universal opt-out testing for HIV in emergency departments in Italy. European journal of public health. 2025(d0w, 9204966).

26. Rockstroh JK SH, Bates L, He H, Ma Y, Robinson E, et al., editor Estimating the health impact and cost-effectiveness of emergency department opt-out testing for blood-borne viruses in Germany. 20th European AIDS Conference 2025; 2025; Paris, France: HIV Med; 2025.

27. Alexander H, Brady M, Poulton M. A calculation of the financial impact of opt-out HIV testing in a London Emergency Department (ED). HIV Medicine. 2016;17(Supplement 1):9EP-10.

28. Williams J, Vickerman P, Douthwaite S, Nebbia G, Hunter L, Wong T, et al. An Economic Evaluation of the Cost-Effectiveness of Opt-Out Hepatitis B and Hepatitis C Testing in an Emergency Department

Setting in the United Kingdom. Value in health : the journal of the International Society for Pharmacoeconomics and Outcomes Research. 2020;23(8):1003-11.

29. Nebbia G, Ruf M, Hunter L, Balasegaram S, Wong T, Kulasegaram R, et al. VirA+EmiC project: Evaluating real-world effectiveness and sustainability of integrated routine opportunistic hepatitis B and C testing in a large urban emergency department. J Viral Hepat. 2022;29(7):559-68.

30. Buti M, Vaz-Pinto I, Magno Pereira V, Casado M, Llaneras J, Barreira A, et al. Emergency department contribution to HCV elimination in the Iberian Peninsula. Int J Emerg Med. 2024;17(1):5.

31. Llaneras J, Ruiz-Cobo JC, Rando-Segura A, Barreira-Diaz A, Dominguez-Hernandez R, Rodriguez-Frias F, et al. Integrating viral hepatitis management into the emergency department: A further step towards viral hepatitis elimination. JHEP Reports. 2024;6(1):100932.

32. Orkin C, Flanagan S, Wallis E, Ireland G, Dhairyawan R, Fox J, et al. Incorporating HIV/hepatitis B virus/hepatitis C virus combined testing into routine blood tests in nine UK Emergency Departments: the "Going Viral" campaign. HIV medicine. 2016;17(3):222-30.

33. Marchant R, Patterson A, Dragovic B, Kelly B, Hamzah L, Hempling M. High-level compliance to opt-out HIV testing in the emergency department (ED) of a large teaching hospital using the biochemistry sample as the sample type for HIV screening. HIV medicine. 2022;23(11):1214-8.

34. Bath R, Ahmad K, Orkin C. Routine HIV testing within the emergency department of a major trauma centre: a pilot study. HIV medicine. 2015;16(5):326-8.

35. Bielen R, Kremer C, Koc OM, Busschots D, Hendrickx DM, Vanelderen P, et al. Screening for hepatitis C at the emergency department: Should babyboomers also be screened in Belgium? Liver international : official journal of the International Association for the Study of the Liver. 2019;39(4):667-75.

36. Bundle N, Balasegaram S, Parry S, Ullah S, Harris RJ, Ahmad K, et al. Seroprevalence and demographic factors associated with hepatitis B, hepatitis C and HIV infection from a hospital emergency department testing programme, London, United Kingdom, 2015 to 2016. Euro surveillance : bulletin Europeen sur les maladies transmissibles = European communicable disease bulletin. 2019;24(27).

37. Casalino E, Bernot B, Bouchaud O, Alloui C, Choquet C, Bouvet E, et al. Twelve months of routine HIV screening in 6 emergency departments in the Paris area: results from the ANRS URDEP study. PLoS One. 2012;7(10):e46437.

38. Evans H, Balasegaram S, Douthwaite S, Hunter L, Kulasegaram R, Wong T, et al. An innovative approach to increase viral hepatitis diagnoses and linkage to care using opt-out testing and an integrated care pathway in a London Emergency Department. PloS one. 2018;13(7):e0198520.

39. Bradshaw D, Rae C, Foxton M, Sullivan A, Roberts P, Pillay K, et al. Undiagnosed hepatitis C virus (HCV) infection in attendees of a large London Emergency Department. HIV Medicine. 2016;17(Supplement 1):44.

40. Gillet C, Darling KEA, Senn N, Cavassini M, Hugli O. Targeted versus non-targeted HIV testing

offered via electronic questionnaire in a Swiss emergency department: A randomized controlled study. PloS one. 2018;13(3):e0190767.

41. Grant C, O'Connell S, Lillis D, Moriarty A, Fitzgerald I, Dalby L, et al. Opt-out screening for HIV, hepatitis B and hepatitis C: observational study of screening acceptance, yield and treatment outcomes. Emergency Medicine Journal. 2019;37(2):102EP-5.

42. Hempling MC, Zielicka-Hardy A, Ellis JP, Majewska W, Fida G. Routine HIV testing in the Emergency Department: feasible and acceptable? International journal of STD & AIDS. 2016;27(14):1267-74.

43. O'Connell S, Lillis D, Cotter A, O'Dea S, Tuite H, Fleming C, et al. Opt-Out Panel Testing for HIV, Hepatitis B and Hepatitis C in an Urban Emergency Department: A Pilot Study. PloS one. 2016;11(3):e0150546.

44. Rachman R, Haque T, Barber TJ, Burns F, Pinto J, Hunter A, et al. Opt-out HIV screening in adults attending the Emergency Department of a London teaching hospital. Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology. 2024;175(cx0, 9815671):105735.

45. Rayment M, Rae C, Ghooloo F, Doku E, Hardie J, Finlay S, et al. Routine HIV testing in the emergency department: tough lessons in sustainability. HIV medicine. 2013;14 Suppl 3(100897392):6-9.

46. Reyes-Uruena J, Fernandez-Lopez L, Force L, Daza M, Agusti C, Casabona J. Level of impact on the public health of universal human immunodeficiency virus screening in an Emergency Department. Enfermedades infecciosas y microbiologia clinica. 2017;35(7):434-7.

47. Smout E, Phyu K, Hughes GJ, Parker L, Rezai R, Evans A, et al. Real-world clinical effectiveness and sustainability of universal bloodborne virus testing in an urban emergency department in the UK. Scientific reports. 2022;12(1):19257.

48. Vaz-Pinto I, Gorgulho A, Esteves C, Guimaraes M, Castro V, Carrodeguas A, et al. Increasing HIV early diagnosis by implementing an automated screening strategy in emergency departments. HIV medicine. 2022;23(11):1153-62.

49. Vermehren J, Schlosser B, Domke D, Elanjimattom S, Muller C, Hintereder G, et al. High prevalence of anti-HCV antibodies in two metropolitan emergency departments in Germany: a prospective screening analysis of 28,809 patients. PloS one. 2012;7(7):e41206.

50. UKHSA. Emergency department bloodborne virus opt-out testing: 12-month interim report 2023. 2024.

51. BHIVA. British HIV Association (BHIVA), British Association for Sexual Health and HIV (BASHH), British Infection Association (BIA) and Royal College of Emergency Medicine (RCEM) joint working group: rapid guidance on opt-out blood-borne virus testing in high-prevalence and extremely high prevalence acute medical settings and emergency departments. 2024.

52. Smout E, Ruf M, Buti M, Pinto IV, Nebbia G, Hunter L, et al. Blood-borne virus testing in European emergency departments: current evidence and service considerations. Eur J Public Health. 2025;35(4):766-73.

53. Davies O, Jane Gutierrez S, Tridimas E, Barber TJ. Using implementation science to support the adoption of routine HIV testing in a suburban emergency department. HIV Medicine. 2023;24(Supplement 3):74EP-5.

54. Stargard M, Reeves I, Millett D, Hale J. Eliminating HIV transmission: Opt-Out testing in Accident and Emergency results in a higher rate of new diagnosis than that seen in the sexual health service in a high prevalence area. HIV Medicine. 2018;19(Supplement 2):S132EP-S3.

55. Pizarro Portillo A, Del Arco Galan C, de Los Santos Gil I, Rodriguez Salvanes F, Negro Rua M, Del Rey Ubago A. [Prevalence of undiagnosed human immunodeficiency virus infection in an emergency department and the characteristics of newly diagnosed patients]. Emergencias : revista de la Sociedad Espanola de Medicina de Emergencias. 2016;28(5):313-9.

56. Rizvi SS, Cheserem E, Mirfenderesky M, Herbert R, O'Connell R, Marcus R. Mind the gap - identifying disparities in HIV care through routine HIV testing in an emergency department. HIV Medicine. 2021;22(SUPPL 3):249EP-51.

57. Dave F, Edwards L, Fernandes C, Kirby R, Obeng D, Roberths G, et al. New diagnoses of HIV through multicentre emergency department opt-out HIV testing. HIV Medicine. 2023;24(Supplement 3):72EP-3.

58. Hamzah L, Childs K, Cormack IS, Davies O, Font R, Haddow L, et al. Opt-Out HIV Testing in Emergency Departments Successfully Addresses Key Gaps in Testing. Topics in Antiviral Medicine. 2024;32(1):54EP-5.

59. Llopis-Roca F, Suárez-Lledó A, Rebollo-Curbelo A, Calatayud-Samper L, Urdániz-Fraguas MJ, Márquez-Rodríguez F, et al. Detection of previously undiagnosed or lost to follow-up hepatitis C infections by implementing an opportunistic screening in an emergency department. Enferm Infecc Microbiol Clin (Engl Ed). 2025;43(8):504-9.

60. Camelo-Castillo A, Jordán Madrid T, Cabezas Fernández T, Rodríguez-Maresca M, Duarte Carazo A, Carrodeguas A, et al. Opportunistic screening for hepatitis C virus infection in an emergency department in Almeria, Spain. Emergencias. 2024;36(1):25-32.

61. Douthwaite S, Evans H, Balasegaram S, Wong T, Nebbia G. Does opt-out testing for hepatitis B and C in emergency departments work? A 6 week pilot study. Gut. 2017;66(Supplement 2):A87EP-A8.

62. McGann H, McLaren J, Baggott A. Implementing and sustaining HIV testing in acute medicine-results from the first 2 years. Sexually Transmitted Infections. 2017;93(Supplement 1):A43EP-A4.

63. Parry S, Bundle N, Ullah S, Foster GR, Ahmad K, Tong CYW, et al. Implementing routine blood-borne virus testing for HCV, HBV and HIV at a London Emergency Department - uncovering the iceberg? Epidemiol Infect. 2018;146(8):1026-35.

64. Phyu K. 'Get tested Leeds': new HIV diagnoses via bloodborne viruses (BBV) testing in urban emergency departments (ED). Future Healthcare Journal. 2023;10(Supplement 3):S30EP-S1.

65. Cullen L, Grenfell P, Rodger A, Orkin C, Mandal S, Rhodes T. 'Just another vial...': a qualitative study to explore the acceptability and feasibility of routine blood-borne virus testing in an emergency department setting in the UK. BMJ open. 2019;9(4):e024085.

66. Favre-Bulle T, Baudat D, Darling KE, Mamin R, Peters S, Cavassini M, et al. Patients' understanding of blood tests and attitudes to HIV screening in the emergency department of a Swiss teaching hospital: a cross-sectional observational study. Swiss Med Wkly. 2015;145:w14206.

67. Fox M, Pettit R, Mutengesa E, Harper A, Nakhoul M. Improving detection of undiagnosed HIV through routine screening in a central London emergency department. BMJ open quality. 2022;11(4).

68. Fairhead C, Barber TJ, Okhai H, Durkin R, Hart J, Pinto J, et al. Demographic disparities in blood-borne-virus screening in two London Emergency Departments: a case for implied consent. AIDS care. 2025;37(5):855-63.

69. Blakey EG, Fairhead CEL, Rodger AJ, Burns FM, Ralph L, Chadwick DR. Clinical staff attitudes towards opt-out consent for blood-borne virus screening in emergency departments in England. HIV medicine. 2025;26(2):326-32.

70. Thornton AC, Rayment M, Elam G, Atkins M, Jones R, Nardone A, et al. Exploring staff attitudes to routine HIV testing in non-traditional settings: a qualitative study in four healthcare facilities. Sexually transmitted infections. 2012;88(8):601-6.

71. Allison S MT, Roberts J, Hill-Tout R, Hindle S, Hickman M, Yardlay L, Todd R, Health R, Horwood J. Staff Perspectives on Implementing Opt-Out Blood-Borne Virus Testing in English Emergency Departments: A Qualitative Study. 2025.

72. Rockstroh J ESC, editor An overview of European consent requirements for HIV and viral hepatitis B and C testing. 25th International AIDS Conference; 2024; Munich, Germany: AIDS 2024.

73. NHSE. Blood-borne viruses opt-out testing in emergency departments in areas of high and extremely high HIV prevalence: good practice guidance. 2024.

74. Vaccari LC, Parry S, Kirkham D, Pike S, Perry L, Widdowson A, et al. Sustained 97% HIV testing rate in the emergency department: The new gold standard. HIV Medicine. 2021;22(SUPPL 2):3.

75. Luiken GPM, Joore IK, Taselaar A, Schuit SCE, Geerlings SE, Govers A, et al. Non-targeted HIV screening in emergency departments in the Netherlands. The Netherlands journal of medicine. 2017;75(9):386-93.

76. Zeng J, Macdonald D, Durkin R, Irish D, Hart J, Haque T. Opt-out testing for hepatitis B and C infections in adults attending the emergency department of a large London teaching hospital. Journal of clinical virology : the official publication of the Pan American Society for Clinical Virology. 2023;169(cx0, 9815671):105615.

77. WHO. WHO guidelines on hepatitis B and C testing. Geneva: World Health Organization; 2017.

78. Iveson P, Drysdale K, Tatjana Marks M, Dufaur L, Cutino-Moguel T, Dakshina S, et al. Achieving over 50% update in routine bloodborne virus testing in an east london emergency department. Gut. 2022;71(Supplement 3):A30EP-A1.

79. McSorley J, Harding-Edgar L, Bak S, Murphy J, Brook G. Opt-out HIV testing in the accident and emergency department 'majors' is effective and acceptable to patients and health care workers. HIV Medicine. 2013;14(SUPPL. 2):46.

80. Vaz-Pinto I, Ortega E, Chivite I, Butí M, Turnes-Vázquez J, Magno-Pereira V, et al. Increasing and sustaining blood-borne virus screening in Spain and Portugal throughout the COVID-19 pandemic: a multi-center quality improvement intervention. Front Public Health. 2023;11:1268888.

81. Wong C, Le Hingrat Q, Salipante F, Mackiewicz V, Damond F, Larrouy L, et al. Combined screening of human immunodeficiency virus, hepatitis B virus, and hepatitis C virus in an emergency department: The URDEPTRIO cross-sectional study. Acad Emerg Med. 2025;32(9):1027-9.

82. Pinto J, Edwards S, Barber T, Burns F. Nurse-led management of HIV results from emergency department opt-out testing. HIV Medicine. 2023;24(Supplement 3):73EP-4.

83. Tincati C, Fusco FM, Santoro A, de Iaco F, Fabbri A, Susi B, et al. HIV screening in the emergency department: an opinion piece by the Italian Societies of Infectious Diseases and Emergency Medicine. AIDS (London, England). 2025;39(8):927-34.

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