

# Blood borne virus screening in a prison and drug misuse centre using Dried blood spot testing with the implementation of an opt-out strategy

A. Dadrah\*, R. Garcha, J. D. Berg, T. Saluja

Sandwell &amp; West Birmingham Hospitals NHS Trust, Birmingham, United Kingdom

\*Corresponding Author

ashok.dadrah@nhs.net

Microbiology Department  
City Hospital  
Birmingham, UK  
B18 7QH

## Introduction

Early detection of Blood Borne Viruses (BBVs) particularly Hepatitis C is important for improved patient outcome and to prevent disease transmission in closed communities.

Due to the rapid turnover of prisoners, a simple and convenient approach is required to screen quickly but at the same time minimise the risks of sharps injuries. Conventional screening can prove problematic in difficult to bleed patients or when there is inadequate access to phlebotomy services.

In response to an increase in the prevalence of BBVs, the introduction of opt-out testing has been implemented in secure services.

Public Health England, NHS England and the National Offender Management Service recommend to improve testing uptake, prison healthcare teams are encouraged to adopt Dried Blood Spot Testing (DBST).

This study was conducted between September 2015 - March 2017, and carried out by SWBH Microbiology and Clinical Biochemistry departments in collaboration with a local prison and a drug misuse centre.

## Aims & Objectives

Here we demonstrate how screening BBVs using DBST, has improved uptake and present prevalence data from a local HMP prison and from a drug misuse centre.

## Method

Training sessions for health care assistants, nurses and doctors was provided to both units by laboratory trained staff. The sessions included site visits composed of a presentation covering the background of dried blood spot technology and a practical demonstration of correct sample collection techniques.

After the training demo, unit staff were encouraged to perform the test on each other and completion of request form to demonstrate understanding of the procedure.

Each member of staff was provided with a training guide which contained key information on collection and contact details.

Blood spot collection packs were provided to the heads of each unit. Each pack contains the components required for testing a single patient, including a request form and instruction leaflet detailing the testing procedure.

Following training of staff, samples were collected using our unique 'in-house' device and transported to the laboratory.

Once received in the laboratory, each card was visually examined by a Biomedical Scientist to ensure the blood spots were of a good quality and then requests entered onto local computer system.

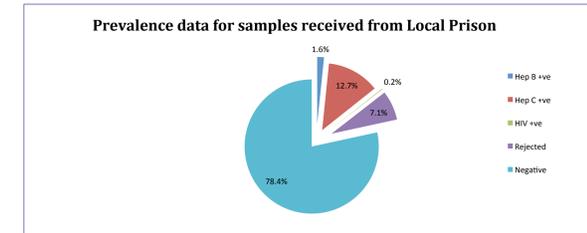
A single 6mm disc was eluted and analysed on the Abbott Architect® iSR2000 for the presence of HIV antigen/antibody, Hepatitis B surface antigen and Hepatitis C antibody using HIV Ag/Ab Combo, HBsAg Qualitative II and anti-HCV assays.



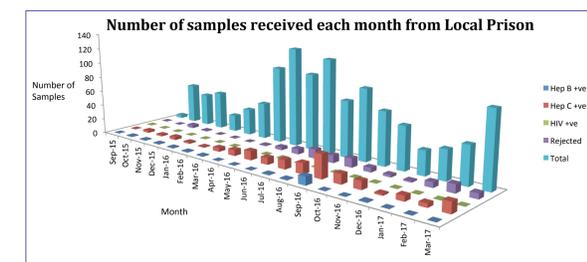
After complete analysis and interpretation of results, electronic PDF reports were issued to each unit via secure email and within two working days of sample receipt.

## Results

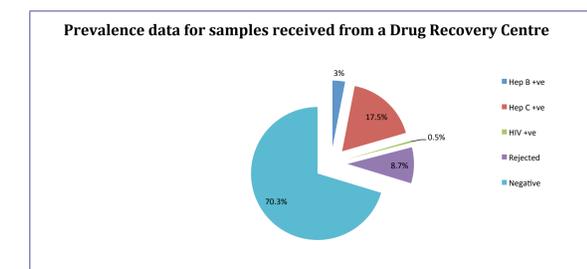
Between September 2015 - March 2017, a total of 1222 patient samples were received from HMP. The number of samples testing reactive for HIV Ag/Ab, HBsAg and anti-HCV were 2 (0.16%), 20 (1.64%) and 155 (12.68%) respectively.



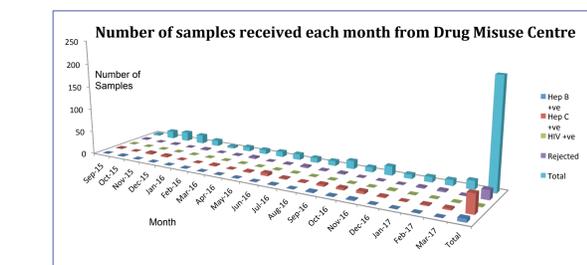
The number of samples received each month from official start date October 2015 for the prison, range from 22 - 133 with a mean of 64.32.



From the drug misuse centre, 229 samples were collected over the same time period. The number of samples reactive to HIV Ag/Ab, HBsAg and anti-HCV were 1 (0.5%), 7 (3%) and 40 (17.5%) respectively.



The numbers of samples received per month for the same time frame for the drug recovery misuse, range from 4 - 19 with a mean of 11.7.



Regarding the ease of use, the failure rate for our method of testing was 7.12% for the prison and 8.7% for the drug misuse centre.

The main reason for rejecting samples on receipt was due to either incomplete patient request forms or less commonly due to the poor quality of blood spots being received.

The number of samples received from the drug recovery centre each month remains similar but for the prison there is large fluctuation.

## Conclusions

Diagnosing a total of 195 and 60 new patients with Hepatitis C and B respectively, that may have gone un-diagnosed in the first 18 months of service implementation emphasises the importance of screening 'high prevalence' populations.

Additionally, detecting 3 new patients for HIV across the two sites, that were previously unknown to staff provides yet more evidence that this is an effective and important screening tool.

Since implementing the bloodspot service in to these two units, the number of BBV samples received by our laboratory has increased. Uptake has also improved and patients appear to be more willing to be tested using DBST as compared to venous sampling. We can conclude that ease of use and time savings of using DBST has directly contributed to this.

Due to its ease of use, uptake has been better than conventional venous sampling methods where there is an increased risk of sharps injuries. The method has been taught to staff at different units and been implemented relatively easily.

There is still room to increase future testing by improving awareness and training amongst all staff at all levels within these and other facilities, this will be the plan for the next phase of the project.