Final Report for Closing the Gap through Clinical Communities (award holders)

Project Title:

The PREVENT project:

PREvention of Blood borne Viruses through Education, clinical Networks, Testing and

Treatment in substance misusing populations

Lead Organisation

Central and North West London NHS Foundation Trust (CNWL); Addiction and Offender Care Directorate (AOCD).

Partner organisations

- Hepatitis C Trust
- Health Protection Agency
- Department of Hepatology, Imperial College NHS Trust
- HIV/GU Medicine Directorate, Chelsea and Westminster NHS Foundation Trust
- Department of Neuroscience and Mental Health, Imperial College London

Lead Clinician

Dr Owen Bowden-Jones

Abstract:

Please describe the nature of the quality problem you addressed, the improvements you aimed to deliver through the intervention and the approaches you used to implement the intervention and what you achieved.
In completing this section please imagine this is the information that will be used to describe your project on your website. Maximum 300 words

ABSTRACT

Background

The project has been designed to prevent patients of substance misuse treatment services of Central and North West London NHS Foundation Trust (CNWL) from contracting blood-borne viruses (BBV) through early screening and testing for BBVs, education and vaccination. It also focuses improving the referral and engagement of those patients who test positive for BBV in tertiary hepatology and HIV treatment.

People with substance misuse disorders are a marginalised and often vulnerable group of people who are at particular risk of morbidity and mortality from blood-borne viruses and preventable infections, specifically hepatitis B (HBV), HIV and hepatitis C (HCV). Hepatitis C in particular is a major health concern for this group and most particularly those who inject. The prevalence of BBVs in London among them is high, with approximately 64% of injectors in the capital estimated to be hepatitis C positive.

Approximately 6,000 patients per annum receive substance misuse treatment provided by one of the 15 clinical services provided by CMWL's Trust's Addiction and Offender Care Directorate (AOCD) in eight London boroughs. Although patients of substance misuse treatment services are tested and vaccinated for BBVs and are referred to tertiary services, many are not receiving these interventions. Improvements must be made at a national and CNWL-levels.

Project Goals- The project is implemented as three sub-projects: 1) Screening; 2) immunisation; 3) pathways to specialist treatment.

The outcomes of the project are as follows:

	PREVENT aim	Current national performance	Additional Aims
GAP 1: Offer of BBV screening for all patients	100%	40-60%	Reduce 'refusal' of test by 50%Increase 'Test taken' by 50%
GAP 2: Offer of Hep B vaccination for all patients	100%	60% offered but only 53% completed course	Reduce 'refusal' of immunisation by 50%Increase 'Test taken' by 50%
GAP 3: Appropriate referral to specialist services	100%	No data	Increase referral by 50%

Project methods-

Quality improvement framework

PREVENT is a Quality Improvement (QI) project, based on the Institute of Health Improvement's framework.

Service user input

PREVENT work was informed by service users' views of obstacles and solutions to improvement. At the onset of the project nine focus group discussions with 50 service users were carried to inform changes needed for improvements to be made in BBV-related interventions.

Quality Improvement methods and tools

A number of QI tools have been used to drive system changes at both macro Trust-wide level (and beyond) as well as at micro local clinical levels.

At macro-Trust wide level -Care bundles for testing for BBVs, for BBV immunisation and for referral to tertiary services have been developed and spread across AOCD services to ensure the standardisation of good practice and improved data collection.

At micro local clinical levels- The implementation of these care bundles by local substance misuse services was carried and system changes were made and tested through Plan, Study, Do, Act (PDSA).

Other resource development

Additional support, such as standardised training and guidance, service mapping and referral templates.

Data and Project Results

Both quantitative and qualitative data were collected and analysed and showed that PREVENT has been successful in making improvements at macro and micro-levels. The project also showed 'what works' and identified barriers to improvement. In particular, the project supported improvement by:

- Increasing the percentages of patients who were offered treatment and vaccination.
- Reducing the percentages of patients who refused the offer of BBV testing or immunisation.
- Increasing the percentages of patients who had a test or were vaccinated.
- Improving pathways between substance misuse treatment and tertiary services for the treatment of hepatitis or HIV.

PREVENT was successful in meeting its objectives despite a challenging new external environment, that coincided with the start of the project.

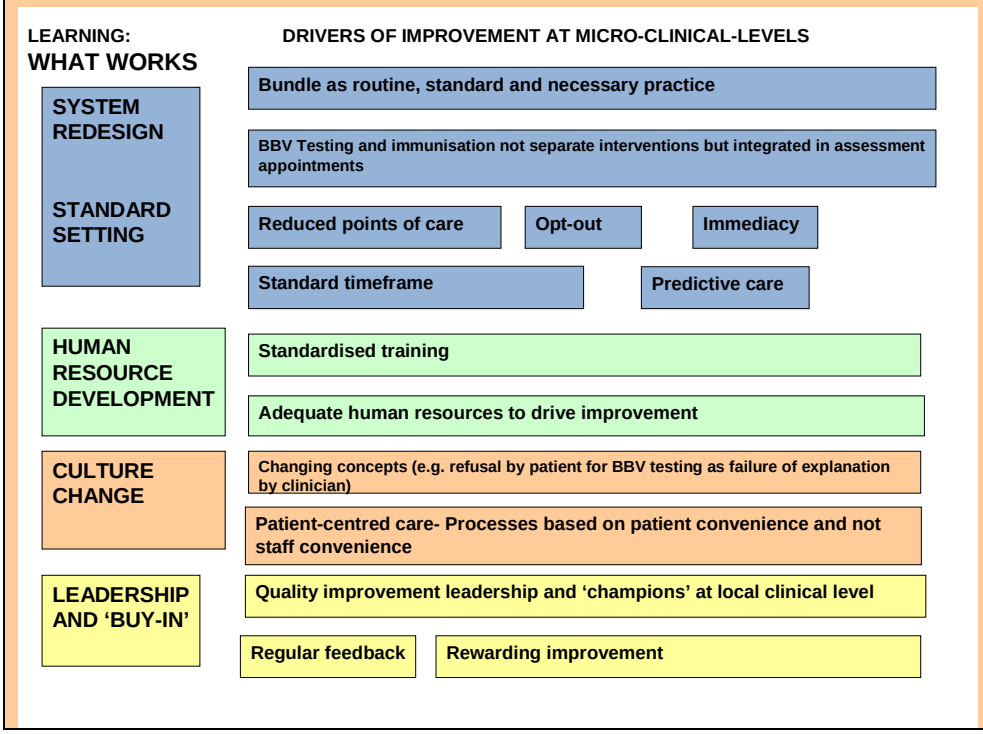
Learning

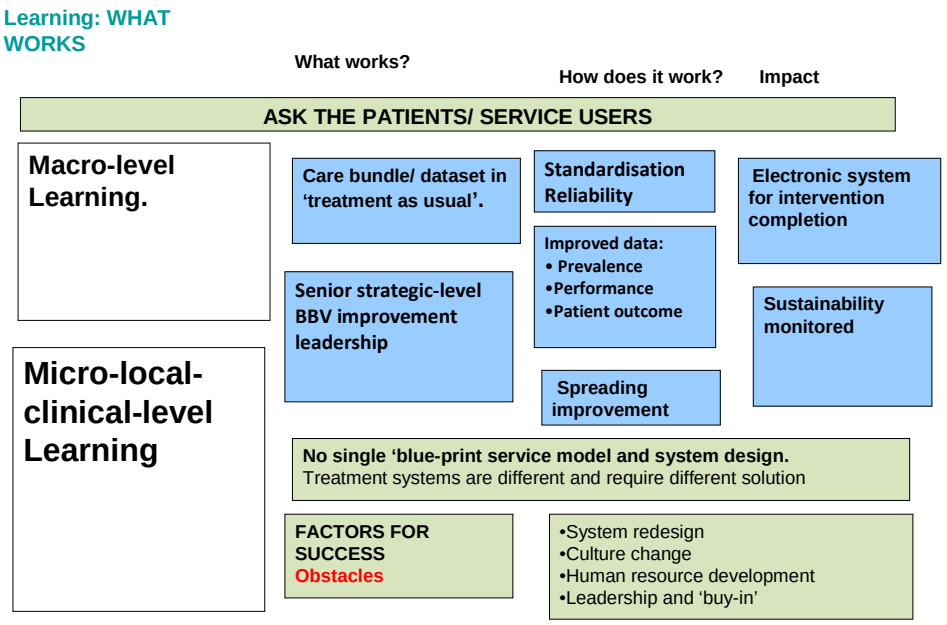
At macro-Trust-wide levels:

- Evidence-based care bundles provide standardisation of good practice and improved data.

At micro-local- clinical levels:

- There is no single solution of blue-print model for the improvement of BBV interventions in substance misuse services, and solutions and must found at local levels.
- There are a number of generalisable and common factors for success and improvement, which have to be in place to drive improvements. These revolve around the following:
    - System re-design
    - Standard setting
    - Human resource development
    - Culture change
    - Leadership
- Quality Improvement must adapt to the changing context of the NHS and funding for substance misuse treatment.





Closing the Gap

PREVENT has contributed in the following ways:

- Closing the gap between actual practice and best practice
- Reducing variations in performance between local clinical services and improving Trust-wide data collection and information.
- Closing the gap between two different clinical worlds: substance misuse treatment and the tertiary sector specifically gastroentology/ hepatology and HIV.

Sustainability and spread

Sustainability and spread were imbedded in the project plan from the onset of the project, culminating in PREVENT bundles have been integrated by the Trust into the standard electronic assessment tool.

Because of the late start of PREVENT, we have agreement from The Health Foundation to continue work on spread and sustainability until September 2012. This will include work on cost analysis and the spread of PREVENT learning outside CNWL.

The impact of the project has been described as follows by the Chief Executive of the Hepatitis C Trust, the national patient organisation:

> *The PREVENT project has been ground-breaking in addressing some of the root problems that have impeded our ability to address a key issue in hepatitis C –*

*the testing and treatment of drug users – and it shown how this can be done often at very little cost. The findings of this project will essential reading for every drug service in the UK (*Charles Gore; Chief Executive; Hepatitis C Trust)

1.1 The Quality Challenge Background Knowledge

Provide a summary of what the situation was at the start of the programme (both nationally and regionally). *400 words*

You may find it helpful to include information from your original application about;

- the significance of the health issue
- the evidence of best clinical practice
- the evidence of patients' views
- and gaps in clinical quality.

Significance of health issue: Blood-borne viruses in patients with substance misuse disorders

People with substance misuse disorders are at particular risk of morbidity and mortality from blood-borne viruses (hepatitis B or HBV), HIV and hepatitis C or HCV), especially –but not exclusively- if they are, or have been, injecting. Yet, these infections are both preventable and can be treated, or in the case of hepatitis C, can often be cured.

Hepatitis C is a particular problem. There have been 14,296 diagnosed patients with hepatitis C in the UK between 1996 and 2010, 90% of whom having acquired it through injecting drug use. Untreated Hepatitis C can lead to liver disease, cirrhosis or hepatocellular carcinoma and it is predicted that 15,840 people will be diagnosed with the latter two by 2020[1]

In the UK, approximately half of all injectors are hepatitis C positive and current levels of hepatitis C transmission among injectors seem to be higher in 2010 than a decade ago. London has higher prevalence than most other English regions. This ranged from 28% in the West Midlands and 29% in the North East regions to 64% in London and 65% in the North West.

The transmission of hepatitis B continues, but has declined in recent years. The HIV prevalence among injectors appears to be stable, although the number of people in HIV

[1] Health Protection Agency: Hepatitis C in the UK: 2011 report London 2011.

treatment who have acquired their infection through injecting has increased in the last 10 years.[2]

Repeated surveys suggest people with substance misuse problems have poor knowledge of the risks associated with blood borne viruses. As many as half of drug users with hepatitis C, and a third of those with HIV, are unaware of their infection. This represents a significant public health challenge in preventing the spread of these viruses. There is also evidence that patients of substance misuse services are not accessing harm reduction interventions including BBV testing and vaccination[3]. Referrals to tertiary treatment services, and engagement with these services, are also poor.

Evidence of best practice and national guidance

The need for improving testing substance misusers for BBVs and vaccination for hepatitis B are well documented by research and recommended by national and international guidance. UK guidance includes the following[i]:

- 2010 government drug strategy and payment by results outcome domains for BBVs (Preventing the spread of blood-borne viruses (BBVs) is a key public health issue, and a key outcome in the 2010 Drug Strategy)
- National treatment agency for substance misuse
- National institute of Health and Clinical Excellence
- Health Protection Agency
- Royal College of General Practitioners
- Healthcare Commission And National Treatment Agency For Substance Misuse (NTA)
- Advisory Council On The Misuse Of Drug
- British HIV Association

Gaps in clinical quality

Audits carried out in CNWL among substance misuse in-patient detoxification units and in a community-based clinic before the start of PREVENT found low levels of BBV testing and Hepatitis C vaccination (2008). Only few of the patients who had hepatitis C in this sample were engaged or even had attended hepatology clinics. This state of affairs mirrored an England-wide situation described by an NTA and Healthcare Commission report (2008).

This, and other evidence, determined the gaps in clinical quality as follows:

GAP 1: All patients presenting to substance misuse services are **not** offered BBV testing and advice.
GAP 2: All patients are **not** offered Hepatitis B vaccination.

[2] Health Protection Agency: Shooting Up- Infections among people who inject drugs in the UK 2010. Update November 2011

[3] Healthcare Commission And National Treatment Agency For Substance Misuse: *Improving services for substance misuse.* May 2008

GAP 3: Patients BBVs are **not** referred to and engaged with, BBV tertiary treatment units.

Evidence of patients' views

Patients' views on meeting the project objectives were a central tenet of the tender to THF and continued to be so throughout the life of the project. This includes:

- The PREVENT team includes local patients as well as a national patient organisation. Patients were involved in the design of the project and tender interviews with THF. Patient representatives continued to be part of the team.

- The first task of the PREVENT project was looking into the views of patients. These informed the system changes made in local clinical services to engender patient-centred care (For details see section 3.1 below).

1.2 Local Problem and context

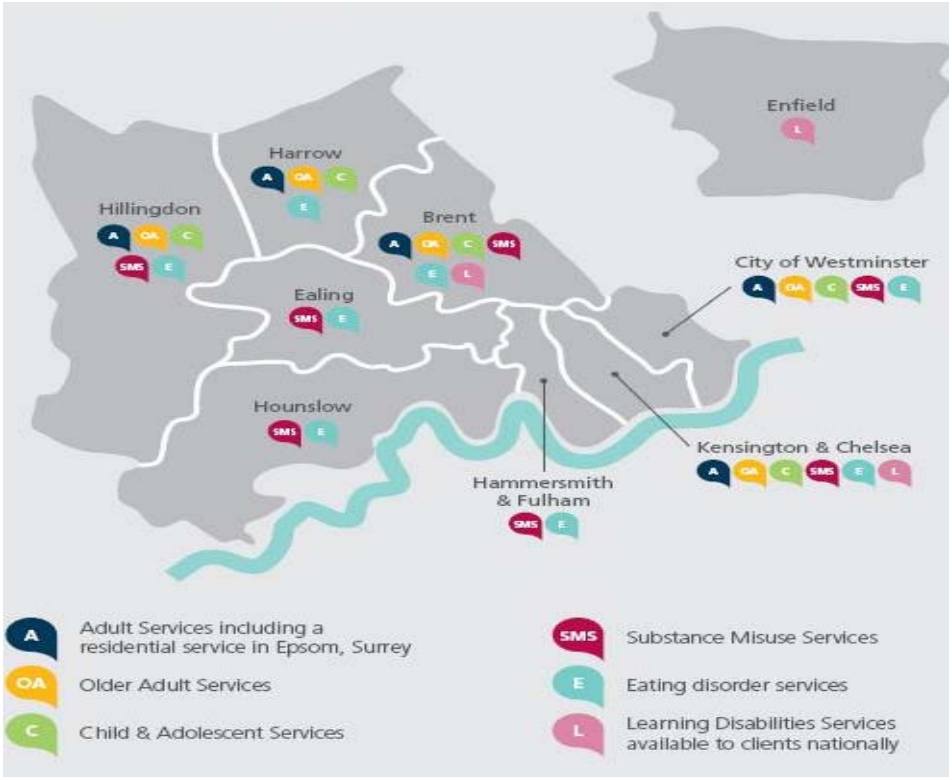
Describe the nature and severity of the specific problem or system challenge that you planned to address. *400 words*

Please describe the context in terms of the environment into which your innovation was deployed; the key characteristics of the organisational setting(s) where the work took place

Please include:

- Geographic scope
- Aim group / population (e.g. people with COPD, adults with learning disabilities)
- Primary / secondary / tertiary care
- Types of organisation / services involved (e.g. voluntary sector provider, NHS acute hospital, mental health Trust)
- Significant stakeholders (e.g. types of staff groups, commissioners, other service providers/ service users?).

PREVENT operates in Central and North West London NHS Foundation Trust (CNWL) and specifically within the substance misuse treatment services Addiction and Offender Care Directorate (AOCD). CNWL is a very large NHS Trust, serving a population of 2 million. Approximately 6,000 people are patients of substance misuse services annually in clinical services located at the time in 8 local authority boundaries- Kensington and Chelsea, Westminster, Hammersmith and Fulham, Brent, Ealing, Hillingdon and Hounslow), as shown below.



The PREVENT team

PREVENT reports to a steering group, made up of members of the following organisations:

Organisation name	**Type of organisation**	
Addiction and Offender Care Directorate (CNWL NHS Foundation Trust), including: • Consultant psychiatrists • Nurse Consultant • Business Manager • AOCD deputy director • BBV nurses/champions • Substance Misuse nurses	NHS Foundation Trust	Secondary care
Hepatitis C Trust	Charity- National patient organisation	Patient-led charity
Health Protection Agency	National Public Health Organisation	Public Health
Department of Hepatology, Imperial College NHS Trust	Acute NHS Trust	Tertiary care

HIV/GU Medicine Directorate, Chelsea and Westminster NHS Foundation Trust	Acute NHS Trust	Tertiary care
Department of Neuroscience and Mental Health, Imperial College London	University	Academic partner

PREVENT STAFF

PREVENT has a dedicated team:

- PREVENT project manager (0.6 WTE)
- PREVENT project workers (1 WTE)
- Hepatology specialist (0.2 WTE)
- HIV specialist (0.1 WTE)

Operational Stakeholders in PREVENT

Key Groups	Key Influences
Substance misuse and BBV treatment patients	Informing improvement and system change
Substance misuse senior management team	Leading the spread and sustainability of improvements across the Trust
Substance misuse clinicians	Leading the implementation of improvements at local clinical levels
Substance misuse managers at local borough level	Leading the implementation of improvements at local clinical levels
Substance misuse service administrators	Compliance with data collection
Hepatology and HIV clinicians	Leading the implementation of improvements at local clinical levels
Learning and Development consultant; Quality Improvement consultant	Training, guidance and learning

1.3 Intended Improvement

Describe the aim(s) of your intervention(s) (the changes / improvements in processes, clinical quality, patient reported quality, clinical engagement and team working, and the impact on quality outcomes). You may find it helpful to refer to section 3 of your application. *400 words*

State precisely the primary improvement – related question and any secondary questions that the Closing the Gap approach is designed to answer.

Please include your driver diagram to help the reader to understand your project.

At the outset what factors did you think would help or hinder the work succeeding?

Improvements and aims of the PREVENT project

The project was implemented as three sub-projects or streams:

- Sub-project One: Screening for blood borne viruses (Hepatitis B and C, HIV)
- Sub-project Two: Vaccination for Hepatitis B
- Sub-project Three: Clinical pathways to specialist services (HIV and Hepatitis tertiary services)

The table below presents a list of the primary aims of the project. Secondary aims are presented in the driver diagrams below.

	PREVENT aim	**Current national performance**
Aim 1: Offer of BBV screening for all patients	100%	40-60%
Aim 2: Offer of Hepatitis B vaccination for all patients	100%	60% offered but only 53% completed course
Aim 3: Appropriate referral to specialist services	100%	No data

Measurable project aims

The driver diagrams below show the intended improvements and goals of the project, with measurable aims.

Aims additional to those identified in the original tender to THF, were included in PREVENT work. They were more challenging aims, but were assessed as essential, if improvements are made to have a real impact on the health of patients and on public health.

Describe Project: Sub-project 1

Improve the percentage of substance misuse clients who are offered screening/testing for BBVs to a aim of100% by May 2012 (baseline 2009-10)

	Percentage
Offered and accepted	67%
Offered and refused	21.2%
Not offered	5.6%
Assessed as not appropriate to offer	5.6%

Boundaries or Limitations:

- Current restructuring of SM services independently from PREVENT.
- Loss of BBV nursing specialism could lead to deterioration of outcomes in short term

Sponsor(s):
Strategic level- SMT- Senior clinicians Commissioners
Operational- Sector managers- service coordinators

Core Team Members:

- PREVENT core team
- Nominated member of staff in PDSA area to lead on implementation

Objective1: All service users are offered testing by June 2011

Measure(s): Percentage of service users **not offered** testing

Aim: 0% of service users not offered testing

Objective 2: All service users accept the offer of the test by March 2012

Measure(s): Percentage of service users who are offered a test but refuse.

Aim: Decrease of refusal by 50% from baseline

Objective 3 : All service users accept the offer of the test are tested for BBVs

Measure(s): Percentage of service users who are tested for BBVs

Aim: Increase of 50% from baseline

Objective 2: All service users accept the offer of the test by March 2012

Measure(s): Percentage of service users who are offered a test but refuse.

Aim: Halve percentage of service users who are offered a test but refuse.

- PDSA for testing bundle and new systems at local levels

- PDSA for testing new patient flow

- Spread/dissemination and measurement of variations between and within services

- Training and other resource development

Describe Project: Sub-project 2

Improve the percentage of substance misuse clients who are offered immunization for HBV to a aim of 100% by May 2012). Baseline for 2009-10

	Percentage
Offered and accepted	61.8%
Offered and refused	15.2%
Immunised already	13.7%
Not offered	4.7%
Acquired immunity	2.6%
Assessed as not suitable	20%

Boundaries or Limitations:

- Current restructuring of SM services independently from PREVENT.
- Loss of BBV nursing specialism could lead to deterioration of outcomes in short term.

Sponsor(s):
Strategic level- SMT- Senior clinicians
Operational- Sector managers- service coordinators

Core Team Members:

- PREVENT core team
- Nominated member of staff in PDSA area to lead on

Objective1: All service users are offered HIV testing
Measure(s): Percentage of service users **not offered** hepatitis immunization
Aim: 0% not offered

Objective 2: Service users **accept** the offer of the vaccine by March 2012
Measure(s): Reduction in percentage of service users who are offered a test but refuse it (
Aim decrease refusal by 50% from baseline

Objective 3: Service users complete the hepatitis B vaccination course

Measure(s): Increase in percentage of service users who complete course
Aim- increase of 50% completion from baseline

Baseline for 2209-10)

Number of vaccines	**Percentage of service users**
One vaccine	10.7%
Two vaccines	9.5%
Course completed	79.8%

- PDSA for testing bundle and new system at local level

- PDSA data collection/ recording compliance

- Spread/dissemination and measurement of variations between and within services

- Training and other resources

Describe Project: Sub-project 3

Review clinical pathways to specialist services for those diagnosed with BBV.
Develop formal clinical networks between Addiction, Hepatitis and HIV services.

Boundaries or Limitations:

- Current restructuring of SM services independently from PREVENT.
- Work across a large number of organizations over where we have less control.
- Very poor baseline data

Sponsor(s):
Strategic level- SMT- Senior clinicians
Operational- Sector managers- service coordinators

Core Team Members:

- PREVENT core team
- Nominated member of staff in PDSA area to lead on implementation
- OACD Informatics team

Objective1: Measure(s): All service users diagnosed with hepatitis or HIV are referred to specialist tertiary services.
Aim: Half the percentage of non-referrals among eligible people.
Baseline for Hepatology (2009-10)

	Percentage
Referred to hepatology	45%

Objective: Compliance to data collection

Measure(s): Up to date data collection for 100% of new CNWL

Objective:
Map all hepatology/liver units and HIV units within CNWL geographic area
Develop pathways to all HIV units within CNWL geographic area
Develop tools and methods to improve referral and engagement to specialist tertiary BBV treatment services.

- PDSA for new systems/processes of service delivery

- PDSA for testing new patient flow

- PDSA data collection/ recording compliance

- Spread/dissemination

1.4 Changes along the way

Identify what changes you have had to make to your original design, methodology, sample size, intervention. The reasons why and the impact this has had on the design of the intervention. *400 words*

Additional and more challenging aims were added to the PREVENT remit at the start of the project. However, these did not constitute the greatest challenged faced by the project.

PREVENT presents a salient example of how the external context of a project can change significantly from the time of its design. It also shows how a project can adapt to the new context and much more challenging environment, yet be successful at making improvements and generating learning that can be spread.

The start of the work of the PREVENT project coincided with the beginning of the global recession. This had impact on the NHS and substance misuse services were particularly affected. This complexity is exacerbated by the nature patient group, often described as having chaotic lifestyles, may not attend scheduled appointments and may drop in and out of treatment.

No substantive changes have been made to the original methodology of the intervention. PREVENT was designed to be a quality improvement project and was implemented at such, as shown in detail in sections 2.1 of the report.

The change in the external context of PREVENT is described below:

Loss of sectors through competitive tendering

Substance misuse services in the London Borough of Harrow, were taken over though a competitive tendering process by a voluntary sector organisation.

Impact on PREVENT

- No work was carried out in Harrow.
- A new patient was recruited on the PREVENT team, as the previous patient was from Harrow services.
- A good model of practice on referral from substance misuse services to hepatology services and liver units ceased to exist.

Loss of BBV nurse specialists

PREVENT was designed in 2009/10, when all substance misuse treatment services within CNWL, had a dedicated specialist BBV nurse. These posts were abolished within the first few months of PREVENT. Instead, BBV interventions were provided by generic substance misuse nurse practitioners. BBV was added to their already wide responsibilities.

The table below lists the challenges for PREVENT resulting from the abolition of the BBV specialist nurses as well as the solutions taken to address these challenges

Challenges	**Solutions**
Loss of natural 'champions'. The BBV nurse specialists would have been the main partners of PREVENT and the drivers of improvement.	Work has been carried out with range of staff dealing with BBV interventions at local levels
Loss/ reduction of expertise at local levels: • Understanding of BBVs • Phlebotomy skills • Professionals with required Patient Group Directive (PGD) training/ competence	PREVENT participated in the training of treatment staff on BBVs. Specifically the training of: • BBV champions • All addiction staff
Suspicion by some treatment staff that the coming of PREVENT has led to the abolition of BBV nurse specialists	Reassurance that PREVENT was not party to decisions on abolition of specialism
Low morale among substance misuse treatment staff	Substance misuse treatment staff commitment to patient welfare
BBV was one of a large list of priorities and was not always regarded as a pressing issue.	Reinforcing importance of early identification and diagnosis of BBVs in terms of individual and public health

Staff reduction and increased responsibility

PREVENT operated at a time of reduced resources, including overall staffing of substance misuse treatment. Clinical staff had increased workload and responsibility than previously.

No clinical work by PREVENT staff

In the original design for PREVENT, the project's specialist hepatology and HIV staff were to provide clinical services to advance the work of the project. It was later decided

that this was not appropriate, especially in terms of sustainability, as PREVENT was a time-limited project.

Instead, PREVENT BBV specialist staff were deployed to enhance and support improvements and provide standardised training.

2. Methods

2.1 The Intervention

Describe the intervention you used and its component parts.

You should write this in such a way that other people would be able to understand what you did. Therefore include:

- **the main factors that contributed to your choice of the intervention(s) and the evidence that originally led you to believe it would deliver the desired aims.**
- **any contextual factors that you believed would be necessary for successful implementation?**
- **What the intervention was**
- **What you actually did – how was the intervention carried out**
- **Who was involved**
- **Who were the key stakeholders**
- **The membership and roles of the group/team leading the work**
- **What was the role of partner organisations**

Please remember that people with no knowledge of your project will read this report so the intervention should be fully explained. It may be helpful to ask someone not familiar with your project to review this and see if they fully understood what you did. ***800 words***

Choice of intervention and contextual factors that must be addressed

Previous sections have discussed the importance to improve testing, immunisation and referral to tertiary services in order to improve individual and public health. They also shown the complexity of the external context and the challenges it posed.

A number of other challenging factors also needed to be addressed and included the following:

Patient-related issues

- Patients are marginalised, vulnerable and stigmatised group of people with a chronic recurring condition.
- Often mistrust 'authority', including health services.
- Have co-morbidities and complex needs.
- BBVs are not often high on their list of priorities.
- Have high rates of drop-out of treatment and high rates of DNAs to appointments.
- Have chaotic lifestyles.

Clinical service variations

- Local services within AOCD had very different configuration, with different staffing levels, professional groups and size of patient population. There was no single model.

Clinicians and other service providers and managers

- Decreasing resources and increasing responsibilities.
- Lack of specialist skills for BBV interventions.
- Competing priorities. Patients with complex and immediate needs.
- Resistance to system changes

BBV tertiary treatment clinicians and managers

- Little experience of working with patients with chaotic lifestyles and little compliance with appointment and treatment regimens.
- Systems in place do not account for this particular patient group lifestyle.

BBV infections

- BBV testing, immunisation and treatment have a very significant impact on individual and public health, but one can is long term rather than immediate. Savings in terms of human life and cost resulting from interventions are long term and not realised in immediate or medium term.

Variability in availability of baseline data

- Baseline data on **some** aspects of BBV interventions only available, especially where this is a Key Performance Indicator. However, other important baseline data non existent or poor and not comparable.
- Staff resistance to data collection and data collection fatigue.

Wide gaps between clinical communities

- HIV and hepatitis treatment outside the locus of control of substance misuse clinicians and managers
- Very little historical communication between substance misuse treatment services based in mental health and tertiary acute services. Different professional groups (Psychiatrists and physicians).

- No shared culture

What was the intervention and how it was carried out?

Prevent is a Quality Improvement intervention. The intervention has a number of components. These were as follows:

A. Informing the intervention by patients' views

We carried out a series of 9 focus group discussions with 50 patients. The aim was to ensure that the project was patient-centred and that patients themselves identify the barriers to improvement as well as the solutions (for details see section 3). Specifically, the findings of this work informed the system-wide and process changes that the PREVENT project would make in partnership with local service level.

Patients represented the diversity of the population in CNWL including:

- Users of treatment services in inner London and outer London boroughs
- Women's groups
- Patient groups (peer-led interventions)
- Homeless hostel

Patients appreciated their involvement in focus group discussions. This was summarised by a patient who said:

> *I just think it's a brilliant thing.* (Male).

B. Quality Improvement methods and models for improvement

PREVENT is based on the framework on the Framework of the Institute of Health Improvement which address three crucial questions:

- What are we trying to accomplish?
- What changes can we make that will result in an improvement?
- How will we know that a change is an improvement?

QI tools have been used at Trust-wide macro level and at local clinical micro levels. These are:

Macro-level system change intervention:

Care bundles:

In order to improve reliability care bundles were developed by PREVENT to be used across all substance misuse services in CNWL (bundle for testing Hepatitis C, Hepatitis

B and HIV; Bundle for Hepatitis B immunisation; and Bundle for referral to specialist treatment; for details see section 2.2).

The bundles provided a macro-level intervention through:

- Standardisation of quality across all 15 substance misuse services in CNWL
- Introducing reliability
- Ensures that patients will receive what they should receive every time, the first time and without waste of resources
- Ensuring the completion of the treatment pathway
- Much improved data collection systems for CNWL and more information for performance monitoring as well as prevalence/ incidence.

The PREVENT bundles have been integrated by AOCD into the standard electronic assessment pack. This also acts as a data collection tool, allowing the interrogation of BBV performance after the end of the project.

Improved data:

The bundles also operate as Trust-wide data collection tools.

- They provide, for the first time, robust and systematic information on core elements of the BBV pathways, which were not collected by the National Drug Treatment Monitoring System (NDTMS).

- They replaced poor and not-fit-for-purpose and not comparable micro-local data collection systems on testing for BBVs, that were in place before PREVENT.

- They provide a national model of good practice to improve comprehensive BBV data for substance misuse services.

<u>Micro-level system change interventions: Plan, Do, Act, Study Cycles in local clinical services</u>

QI work was also carried out at micro local level treatment services on how to implement the bundles to make improvement in front-line services.

System changes were made by local services and their effectiveness at making improvements was tested by Plan, Do, Act, Study Cycles. Changes were informed by:

- Patient views
- QI and health service research evidence and
- Configuration/resources of local clinical services and view of staff.

A real-time measurement of the outcomes was carried out by PREVENT staff. There was regular feedback to clinical services.

We carried out a number of PDSAs in services in Kensington and Chelsea services (one PDSA on testing, one on immunisation), Brent (testing), Hillingdon (testing), Ealing (testing and immunisation) and Westminster (testing and engagement with specialist hepatplogy treatment).

C. Other intervention components

- PREVENT Training

    - Standardised training packages were developed and delivered to BBV 'champions' to non-BBV specialist substance misuse treatment practitioners (clinical and non-clinical staff) as well as to volunteers in service-user-led organisations.

    - Training on Quality Improvement methods and tools (planned for the March-September 2012 period)

- Resource Development

    - Quality Improvement (QI) Manual aimed at substance misuse treatment services (to be completed by September 2012).

    - Comprehensive mapping of substance misuse services and hepatology/ Gastroentology and Liver units and HIV treatment within CNWL borders.

    - Directory of hepatology and HIV treatment services and referral procedures aimed at substance treatment services

    - Standardised referral letter to hepatology and HIV treatment

Quality Improvement Interventions with Key Stakeholders

At macro level

The main tenet of our work at macro-levels was the integration of the PREVENT bundles in the standard electronic patient assessment tool. This ensures both its spread across all substance misuse treatment services in the Trust and its sustainability over time.

Trust-wide and local service-level data will continue to be collected and analysed by AOCD, after the end of PREVENT, for monthly performance monitoring. The dataset based on the bundles provides the Trust with more comprehensive BBV data than the national NDTMS dataset.

Work was carried out with the senior management team of Addiction and Offender Care Directorate (AOCD) from the onset of the project to embed improvements across the Trust. It was also carried out with key committees of the Directorate and CNWL NHS Foundation Trust.

At micro-levels

At the level of local services we worked directly with a range of stakeholders most particularly on PDSAs. Stakeholders typically included:

- Lead clinician (Consultant psychiatrist)
- Lead of QI project in the service (including Registrars, Nurses, service manager and Sector managers)
- Clinical staff carrying out BBV testing and immunisation) and other clinical staff.
- Administrative staff (especially in terms of data collection)

2.2 Measurement
How did you measure the impact and outcomes of your project in terms of improved quality to care.

Please note that the actual results should come in section 3. In this section you should show what you were measuring and how the data was captured. Please also include any recognised measurement models you used. 400 words

Measurement

The bundles mentioned above also operated as main data collection tools and can be found below.

The outcome domains of the bundle/ data collection tools were based on the following questions:

- Data already routinely collected by substance misuse treatment services in England and Key Performance Indicators (KIPs) collected through the National Drug Treatment Monitoring System (NDTMS).
- Outcome data specifically designed by the PREVENT project. This provided more comprehensive BBV data than the NDTMS dataset.

The following data collection bundles were used:

1. Testing for BBVs

	• Hepatitis C	Hepatitis B	HIV
1. Previous BBV test	☐ No ☐ Yes Date ……	☐ No ☐ Yes Date ……	☐ No ☐ Yes Date ……
If Yes, results of previous test	☐ HCV+ ☐ HCV- ☐ Not known/ not disclosed	☐ HBV+ ☐ HBV- ☐ Not known/ not disclosed	☐ HIV+ ☐ HIV- ☐ Not known/ not disclosed
If sero-positive	If HCV+: ☐ Virus cleared ☐ HCV acute or chronic ☐ Client does not know	If HBV+: ☐ HBV+ ☐ Previous infection ☐ Client does not know	If HIV+ ☐ In treatment
2. Offer test	Hepatitis C testing offer: ☐ Offered and accepted ☐ Offered and refused ☐ Not offered ☐ Assessed as not appropriate to offer	Hepatitis B testing offer: ☐ Offered and accepted ☐ Offered and refused ☐ Not offered ☐ Assessed as not appropriate to offer	HIV testing offer: ☐ Offered and accepted ☐ Offered and refused ☐ Not offered ☐ Assessed as not appropriate to offer

If client refuses test	Reasons for refusing test ☐ Fear of result ☐ Does not think testing is relevant to them ☐ Client would like to consider it at a later stage ☐ Does not have enough information to make an informed decision ☐ Other please specify	Reasons for refusing test ☐ Fear of result ☐ Does not think testing is relevant to them ☐ Client would like to consider it at a later stage ☐ Does not have enough information to make an informed decision ☐ Other please specify	Reasons for refusing test ☐ Fear of result ☐ Does not think testing is relevant to them ☐ Client would like to consider it at a later stage ☐ Does not have enough information to make an informed decision ☐ Other please specify
If assessed as not appropriate to offer	Why assessed as not appropriate ☐ Test carried out recently and no high risk activity to indicate re-testing ☐ Clinical contra-indication ☐ Other please specify	Why assessed as not appropriate ☐ Test carried out recently and no high risk activity to indicate re-testing ☐ Clinical contra-indication ☐ Other please specify	Why assessed as not appropriate ☐ Test carried out recently and no high risk activity to indicate re-testing ☐ Clinical contra-indication ☐ Other please specify
3. Test carried out	☐ Yes ☐ No Hep C test date ----------	☐ Yes ☐ No Hep B test date ----------	☐ Yes ☐ No HIV test date ----------
4. Test results	Hep C positive ☐ Yes ☐ No	Hep B positive ☐ Yes ☐ No	HIV positive ☐ Yes ☐ No

If sero-positive	If HCV+ ☐ PCR test+ ☐ PCR test -	If HBV+ ☐Anti-HBs pos and HBsAg pos ☐ Anti-HBs pos and HBsAg neg ☐ If no, Offer bundle immunisation	
5. Referral to specialist BBV treatment	Referred ☐ Yes ☐ No	Referred ☐ Yes ☐ No	Referred ☐ Yes ☐ No
If not referred	If not referred why not ☐ Not indicated at this stage ☐ Client refuses referral ☐ Other please specify	If not referred why not ☐ Not indicated at this stage ☐ Client refuses referral ☐ Other please specify	If not referred why not ☐ Not indicated at this stage ☐ Client refuses referral ☐ Other please specify
6. Patient attends first appointment	Attends ☐ Yes ☐ No	Attends ☐ Yes ☐ No	Attends ☐ Yes ☐ No

2. Immunisation

Bundle Element	**Data collection**	**Date**	
Offer HBV vaccination	☐ A Offered and accepted ☐ B Offered and refused ☐ C Immunised already ☐ D Not offered ☐ E Acquired Immunity ☐ F Assessed as not appropriate to offer	Date of test offer ……. ……. …….	
Hep B vaccination count	Not applicable ☐	Date	
	Vaccine One ☐	Date ……. ……. …….	☐ client DNA ☐ new appointment made

	Vaccine Two □	Date …… …… …….	□ client DNA □ new appointment made
	Vaccine Three □	Date …… …… …….	□ client DNA □ new appointment made

How data were captured

Data were collected throughout the BBV pathways. They were collected by clinicians and others providing the interventions, often with support from administration staff.

There were instances whereby PREVENT staff supported treatment services in the collection of data, especially at the beginning of PDSAs. Although this was not the intention, we also did not want poor data collection to impede project aims.

Data analyses

Data were analysed by PREVENT, typically on a weekly basis. Descriptive statistical analysis was carried out using SPSS, to look at variations and change. Run charts were produced and discussed regularly with stakeholders.

The analysis of bundle data allowed the measurement of variations and improvements at the following levels:

- Trust-wide macro level.
- Local clinical levels.
- Clinician level.
- Patient level.

3. Results

3.1 Outcomes

What were the results of the project?

You should refer to the baseline, process, outcome and balancing measures.

Please provide analysis and commentary using both quantitative and qualitative data. Use this data to provide evidence of change in key metrics.

Include summaries of baseline data and an explanation of any statistical techniques used to demonstrate significance.

Please use images, graphs, charts or other media to summarise and support your data where this will aid understanding. Please remember to fully annotate any charts

Process Measures: Reflect the care delivery to the patient; what is done to, for, with, or by defined individuals or groups as part of the delivery of services.

Outcome Measures: Evaluate the degree of change in the well being of a defined population related to an intervention. Improvement in outcome measures reflects the results we are aiming for related directly to the patient and has an effect on mortality and morbidity.

Balancing Measures: May be process or outcome measures, and usually measure some aspect of the system that may inadvertently be affected by changes in specific areas of the model or track a competing explanation for improvement. Balancing measures together with the selected process and outcome measures help to foster systems thinking. 1000 words

QUALITATIVE ANALYSIS: PROCESS MEASURES AND PATIENTS' VIEWS ON IMPROVEMENT

In order to ascertain patients' views on obstacles and solutions for improvement, nine focus group discussions were carried out.

The list below provides some of the main themes, conclusions and recommendations made by patients. It is illustrated by quotes from patients to provide a flavour of their contribution. These views will also be taken into account when changes are made through the Plan, Do, Study, Act cycles.

A full analysis of focus group discussions has been written in two reports (see attached appendices). An article will be submitted for publication to a peer-reviewed journal (International Journal of Drug Policy).

Focus groups have identified the following:

Screening / Vaccination:

- The need for services to be opportunistic and maximise the convenience to the patient. Reducing the number of points of care.

> *You certainly have to have it convenient because if it isn't, people aren't going to bother. You can't do it both ways, because they're using, you can't treat them as normal people, but if they're doing something else (*in the clinical service*) where they're getting something out of it then why not, then they're winning twice.* [Male]

> I wouldn't have made two journeys, I would only come to get my script so my vaccinations would have to be fitted in with that because I wouldn't go and see my key worker for the script on a Monday and have to come in to see the nurse for a vaccination on a Wednesday, I just wouldn't bother. So it would have to be fitted around, like the reason why I was coming.(Female)

- Engagement with special sub-groups at risk or vulnerable, such as those with substance misuse and mental health co-morbidities.

> *For certain people, there are a lot of people in the mental health service as well that have got these viruses and they're mentally ill because it goes not just with drugs, it tends to obviously mess with your brain but a lot of people have got a lot of mental health issues and they're agoraphobic, they don't want to go out, they're frightened of systems, frightened of authority*. [Female]

- Mechanisms to provide reminders about, and incentives to attend, appointments.

> [*I]f people (*clinical staff) *could try and make it easier for them* (patients) *to say perhaps get a little phone call or something to come in for jab sort of thing… A text, anything, depending on the client's personal preference as to how that reminder comes because you don't know who's living in the household and the privacy thing. But to offer a reminder service would be perhaps something to consider*. [Female]

Pathways to specialist care:

- The need to achieve balanced information about the risks and prognosis for those with a BBV versus side effects of treatment, which can be quite severe. The need to prepare patients for hepatitis C treatment by giving information about what to expect.

  like I would like to be honestly told the pros and the cons; do you know what I mean? But all of the pros and cons, like, "This could really happen, you could be going through bouts of suicidal..." Just so I'm fully armed and prepared to... [Male]

- The need to assess a client's social capital and capacity to sustain engagement with treatment and specialist tertiary services (and if necessary provide support).

  I think one of the most important things that they don't tell you is that you do need a good support network round you when you're doing that (hepatitis C treatment)*… . And they* (patients) *should be advised on making sure they have somebody that can at least come in and check on them once a day or somebody. Somebody who's going to be at the other end of the phone..* [Female]

- The need for continuity of care, information exchange and co-ordination of treatment planning between drug services and specialist tertiary hepatology treatment. This could be for example closer monitoring, supervision and possibly methadone dose adjustment by drug services for clients undergoing treatment who may be vulnerable to relapse into drug use in response to specialist treatment side effects.

  They (clinicians) *put it* (methadone dose) *up because like at the beginning* (of hepatitis C treatment) *when you have side effects it really is similar to side effects withdrawing.* (Female).

OUTCOME MEASURES- IMPROVEMENTS THROUGH PLAN, DO, STUDY, ACT CYCLES: Case studies

The section below will present the outcome measures of work carried out at micro-clinical levels. Results are presented in two general sections: a) what worked; learning factors for successes; and b) what did not work; identifying obstacles.

Data were collected from all services in which PDSAs were carried out. Case studies are presented below.

The care bundles mentioned above were used as data collection tools. The consisted of a) national Key Performance Indicator questions and b) questions developed by PREVENT.

A. What Worked At Micro-Clinical Levels- Successes and Improvements

What worked: *Using an evidence-based care bundle*-**Success:** Improving the offer BBV screening and information to *all* patients attending addiction services (Aim not offered 0% of new patients)

The **offer** of BBV testing and information is a national Key Performance Indicator (KPI) and one of the main aims of PREVENT was to improve performance in AOCD services.

PDSAs were carried out with some services to improve their rate of offer of testing for Hepatitis C, Hepatitis B and HIV. The following changes were made:

- Introduction of evidence care bundles covering BBV pathways
- Training on the use of the data collection tool as well improved understanding of KPI data collection.
- Rise in profile/ importance of BBVs among clinical staff.

All PDSAs showed some improvement and exceeded the national baseline data of 40 to 60%, as can be seen in the table below.

Service	Percentage of patients not tested PDSA	National baseline data (% of patients not offered testing)	PREVENT aim
Clinical service 1	0%	Between 40% and 60%	0% of patients not offered testing
Clinical service 2	0.9%		
Clinical service 3	10.2%		

What worked: *Human resource development; Cultural change*- **Success:** Reducing rates of refusal of BBV tests by patients by 50%

The next PREVENT aim was to reduce by 50% the percentage of patients who refuse BBV testing, when indicated. This was a problem identified in some local services more than others. The two graphs below show this improvement journey.

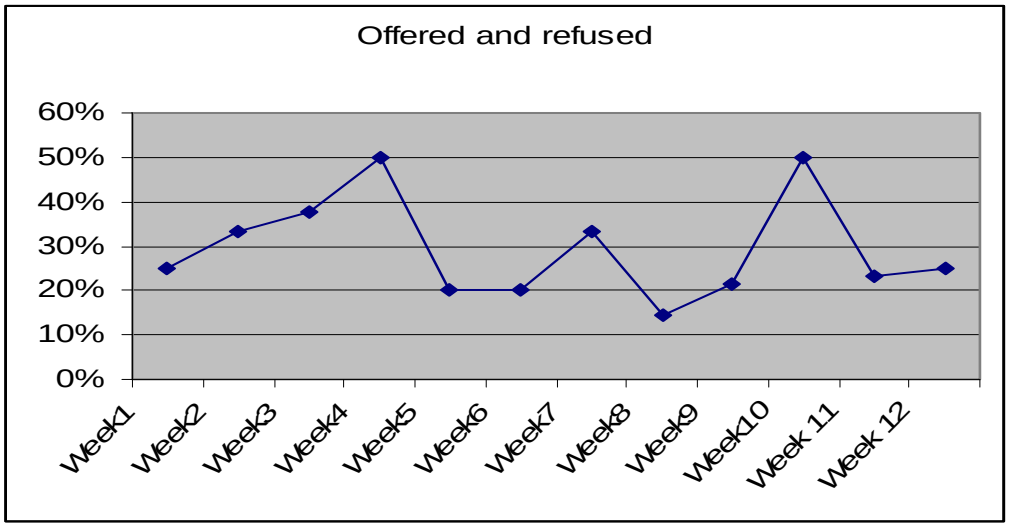
Graph 1: Shows the performance of the service at baseline, whereby a substantial percentage of patients refused the offer of testing. Indeed, the bundle made it possible to identify that more than three quarter of those who refused believed that 'BBV testing is not relevant to them'. This flies against evidence of very high rates of hepatitis C prevalence and incidence, especially among injectors.

Further data analysis showed the following:

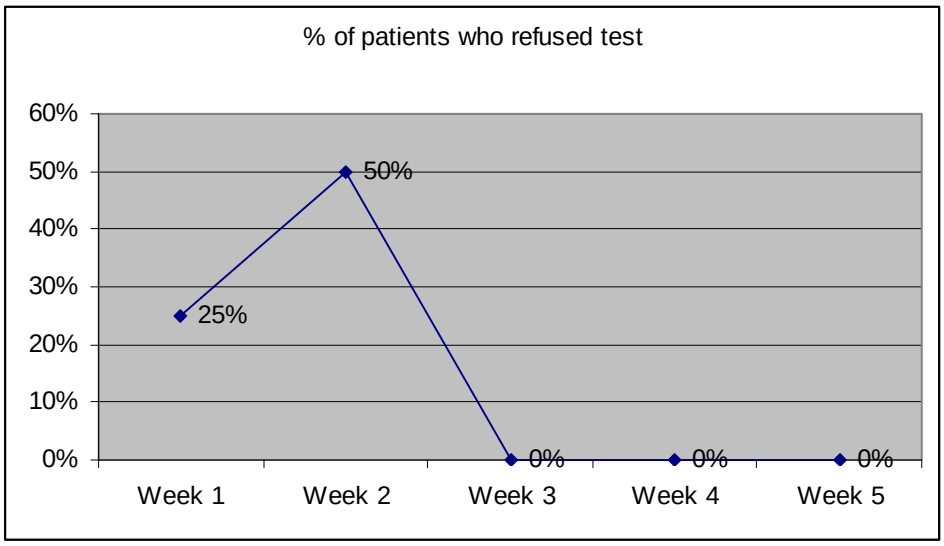
- Individual patient variations
- Variations between services
- Variations between staff members
- Variation by date/time: Refusal increases at time of staff shortages (e.g. summer holidays).

Graph 2: Shows improved performance resulting from the following changes made:

- Cultural change: Re-conceptualise refusal of test by patient as 'failure of explanation' by clinician
- Clarify eligibility and prioritisation criteria.
- PREVENT BBV Standardised training package to all clinical and non-clinical staff of this service.



Graph 1: Percentage of new patients in Clinical A, who have refused the offer of BBV testing



Graph 2: Percentage of all new patients refusing offer of testing for BBVs.

What works *System redesign and standard setting* **Success:** *increasing by 50% percentage of new patients tested and immunised within two months of starting a treatment journey:*

One of the most challenging aims of PREVENT was increasing the percentage of patients who actually received a test for BBVs, after the offer of the test was made. (PREVENT aim to increase the percentage of patients tested within two months of starting treatment by 50%).

No Trust-wide baseline data on percentage of patients tested existed. The limited baseline local service level data available showed that the percentage of patients tested in the early phases of their treatment journey was poor. No fail-safe processes were in place to ensure that all patients were tested. There were long delays between the start of a treatment journey and treatment as well as potential for patients 'to fall through the net' and not been tested at all.

The PREVENT project developed a number of solutions for improvement and tested them through PDSAs at micro-clinical levels. Changes were based **on system redesign and standard setting**.

The new system was based the hypothesis that the following factors will lead to an increase of patients being tested for BBV at the start of a treatment journey:

- Testing for BBVs was offered on an opt-out basis
- Testing was offered as part of a wider battery of overall health assessment of all new patients; every new patient would necessarily go through this point of care in his or her journey
- Single point of care, or reduced points of care where this not possible.

- Patient-centred care; Patient convenience: BBV testing did not require the patient to attend an additional appointment
- Testing was carried out immediately after the offer of the test was made
- There is a standard timeframe for testing and immunisation.

Below are case studies of PDSAs to improve testing and immunisation. All show the effectiveness of service redesign and standard setting in achieving improvements.

Specifically, they show improvements at the following levels:

- Increase in percentage of service users being tested for BBVs or immunised for hepatitis B.
- The substantial reduction of time between start of a new treatment journey and receiving the BBV intervention (testing or immunisation).

Clinic A: *(testing for BBVs)*

A comprehensive system change took place in clinical service A, whereby testing for BBV will be carried out by the service doctor at time of medical assessment and based on the factors listed above.

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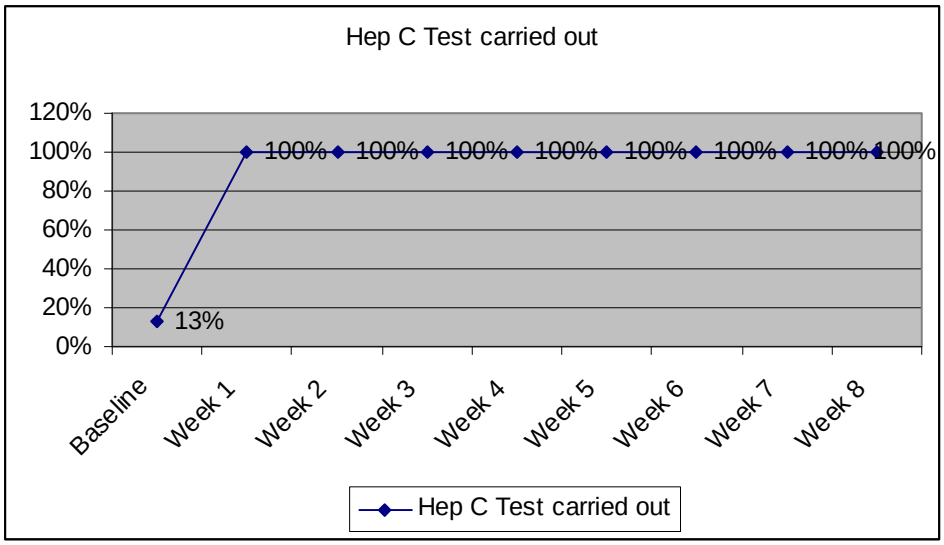
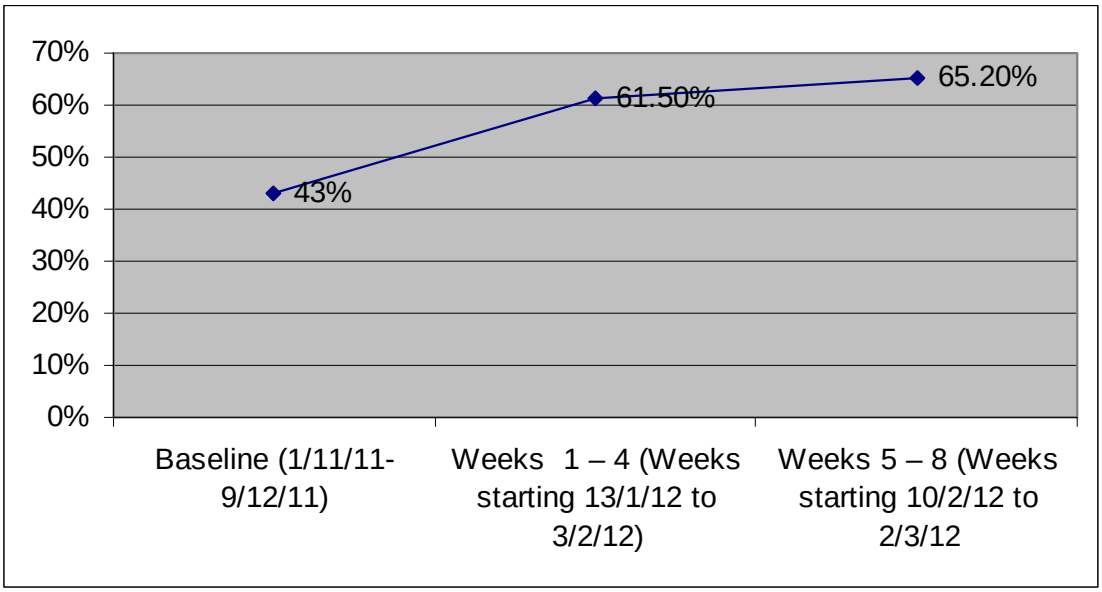
The graph below shows that the hypothesis was correct: substantial improvements were made. There was an increase in hepatitis C testing from a baseline of 13% of clients who accepted the offer of testing at baseline (in the two months preceding the PDSA) to 100% of clients who have accepted the offer of testing.



Graph 3: Percentage of all new patients who had a blood test for BBVs at the start of the treatment journey.

Clinic B: *Testing for BBVs*

In another clinical service we investigated the delivery of BBV testing through a nurse, using similar principles. The graph below shows the improvements made in the percentage of new patients having a blood test at the start of the treatment journey.

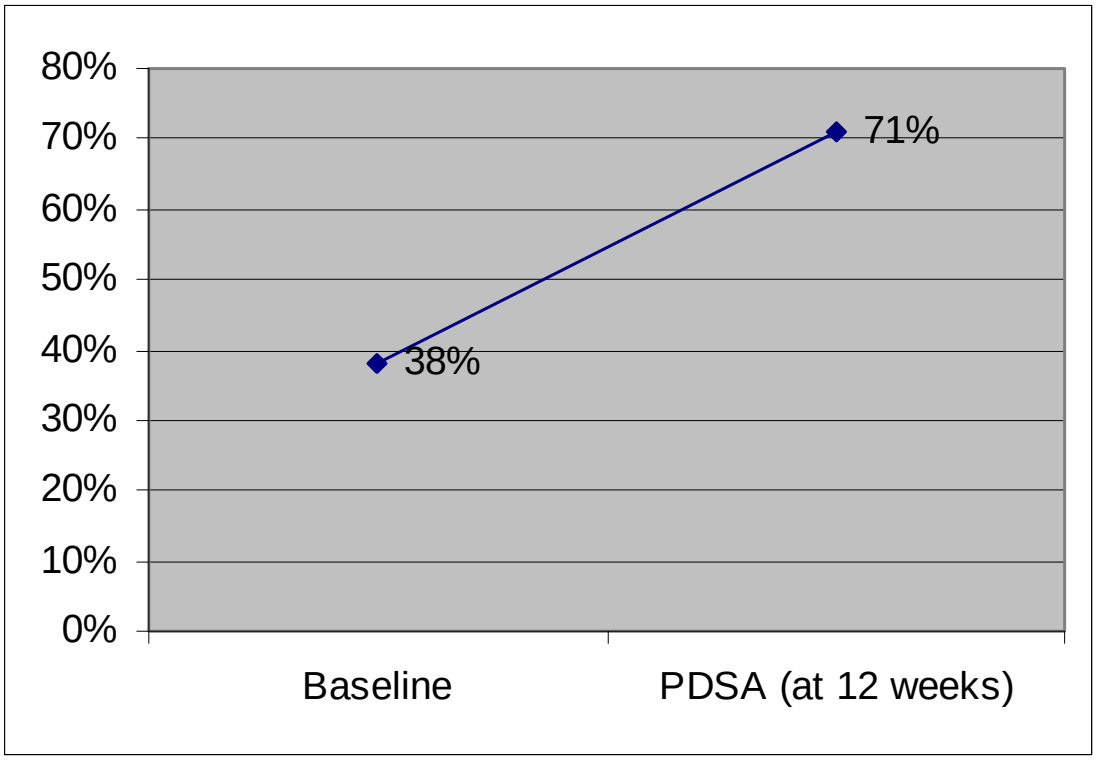


Graph 4: Percentage of all new patients who had a blood test for BBVs at the start of the treatment journey.

Clinic C: *Hepatitis B immunisation*

PDSAs focusing on hepatitis B immunisation were also carried out, based on the principles listed above. A system was developed for hepatitis B immunisation, using the same principles as those discussed above, including patient convenience. In this system, a nurse offered immunisation to all clients at the triage stage, and carried out the vaccination there and then if the client accepted it and was eligible.

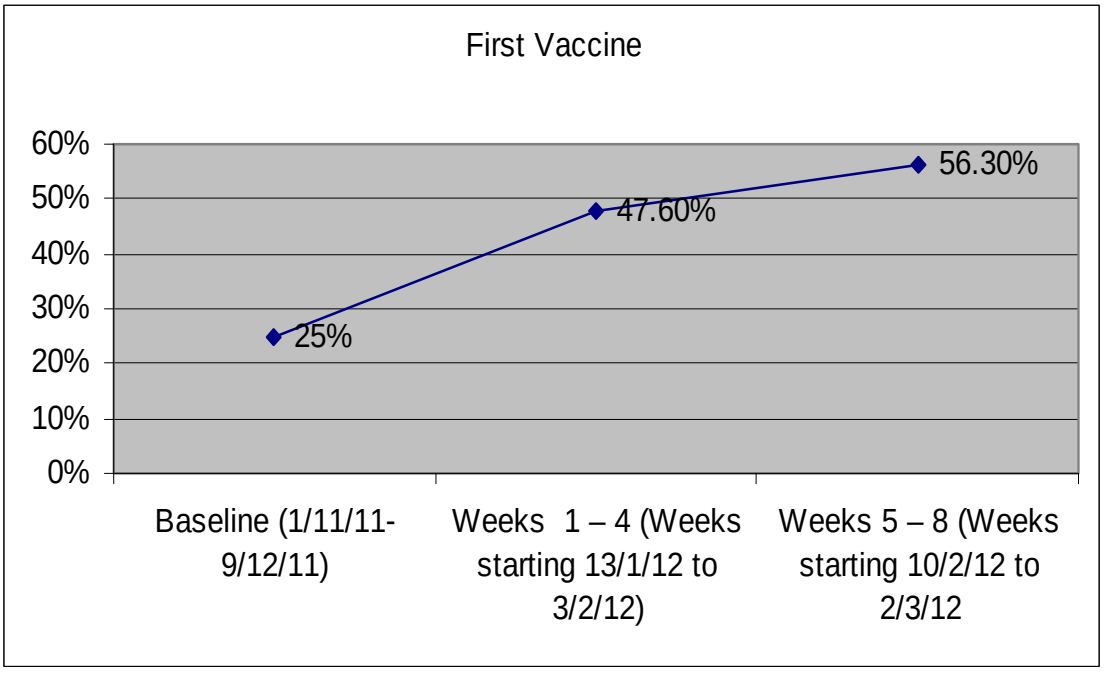
A PDSA was carried out in another service, testing a model similar to the one discussed above. The graph below show improvements made in eight weeks.



Graph 5: Percentage of new patients receiving the first dose of the vaccine

Clinic D: *Hepatitis B immunisation*

The same hypotheses as above were applied by this local service. Graph 6 below shows to improvements, with a doubling of the percentage of patients receiving their first vaccine.

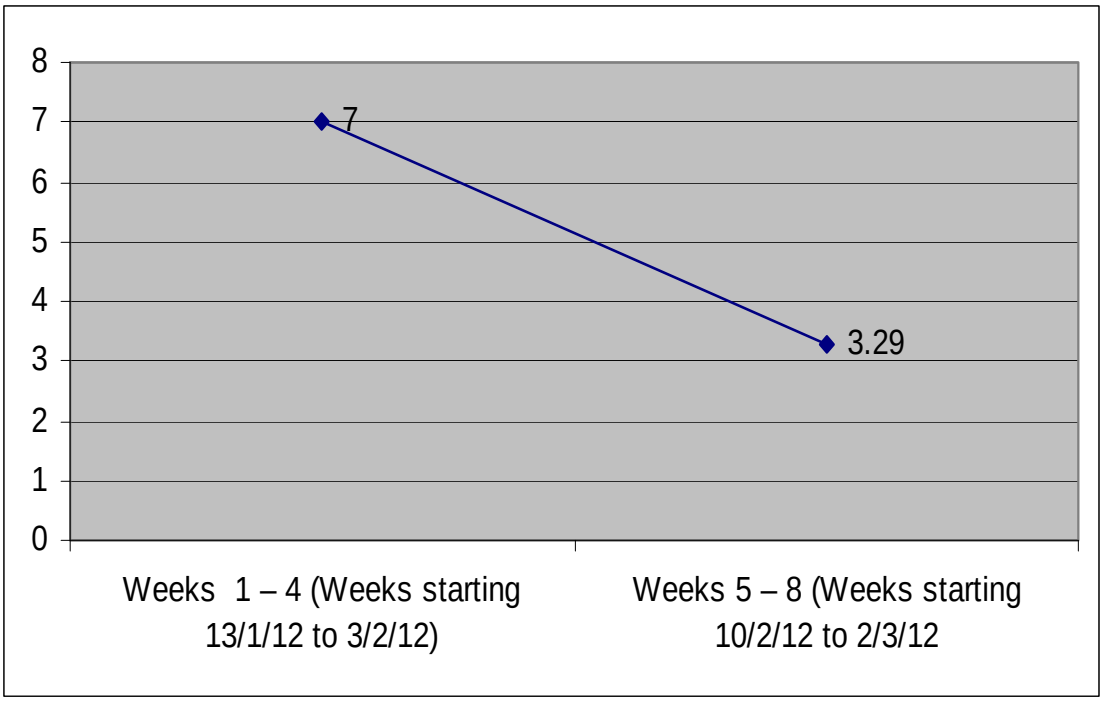


Graph 6: Percentage of new patients who have received at least one vaccine (PDSA and vaccination course timeframe did not allow for accurate data measurement for vaccine 2 and 3).

Clinic D: Reducing timeframe between entry to treatment and first vaccine

Graph 7 below shows the very good improvements made by this treatment service in the delay between the time a patient, first started a new treatment episode and the time s/he received the first dose of the hepatitis B vaccine. In the first stage of the PDSA the vaccine was given on average 7 days after the start of treatment; this was reduced to an average of just over 3 days by the end of the PDSA.

No baseline data were available on the number of days, but no system was in place to ensure that the vaccine was given early in a treatment journey. A first dose could have been given months after treatment start.



Graph 7: Average number of **days** between first entry to treatment and first dose of vaccination

B. What Does Not Work- Barriers To Improvement

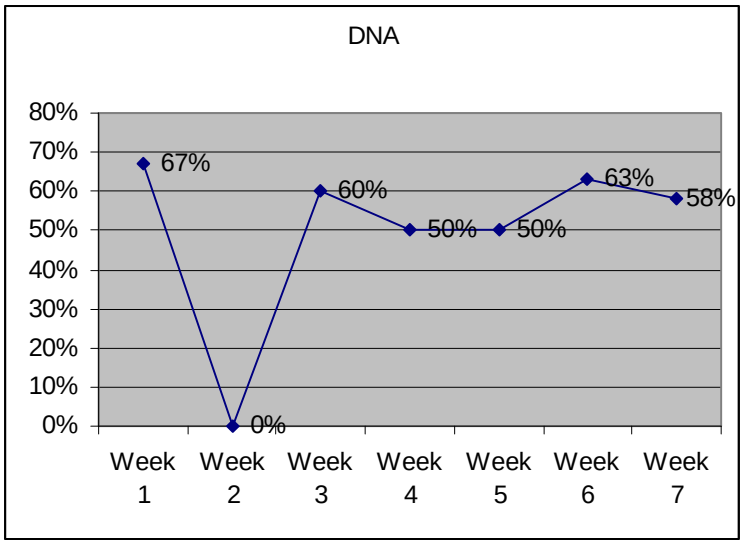
PDSAs in local clinical services also identified obstacles to improvement. The case studies presented below provide detailed information on what the barriers are.

Obstacles to success*: Systems and cultures based on convenience of staff and not patients create waste.*

PDSAs showed that was a system that involves too many points of contact and is built on the convenience of staff and not patients is a barrier to improvement and creates waste.

In the focus groups discussions mentioned above, patients clearly identified the need for clinical services to ensure that BBV testing and immunisation should be carried out at a time when a patient had an appointment with the service for other care needs. Additional appointments, especially for interventions like testing or immunisation often not considered as high priority by patients, will maximise the possibility of non-attendance (DNA).

The graph below is from a PDSA in a clinic where patients were asked to attend an additional appointment at the clinic for BBV testing. Data show that rates of non-attendance (DNAs) to BBV appointments are very high, as predicted by patients. Data must be seen in light of the waste in the system and resources and must be addressed as such.

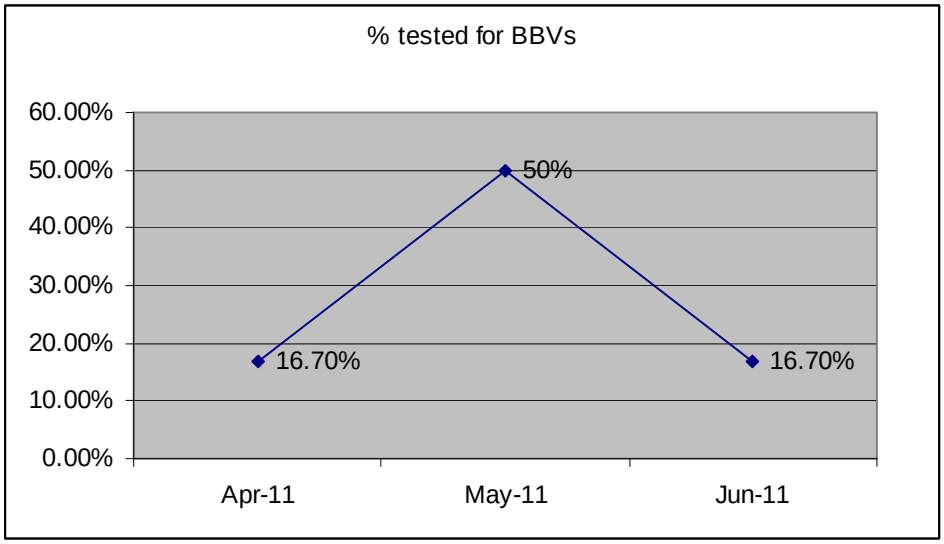


Graph 8: Percentage of BBV appointments not attended (DNA) by patients

Obstacles to success: *Resources constraints to drive the improvements*

The lack of resources or staff time necessary to drive improvements was also identified as a barrier to improvement. The graph below was taken from a PDSA in a clinical service with a large number of patients, but only one member of staff to carry out all BBV testing and immunisation , a on one day a week basis only.

The PDSA started by making some systems changes, but improving the referral process to this nurse. However, despite these changes, it was not possible to improve activity and raise the percentage of patients tested to the level desired, as can be seen in graph 8 below (the rise in May reflects a month with additional Bank Holidays and fewer patients starting a new treatment system, and fewer numbers wanting the test, rather than a sustainable improvement).



Graph 9: Percentage of new patients tested for hepatitis C within 3 months of starting treatment

Obstacles to success: *No systematic systems for BBV interventions for new clients; lack of predictive care*

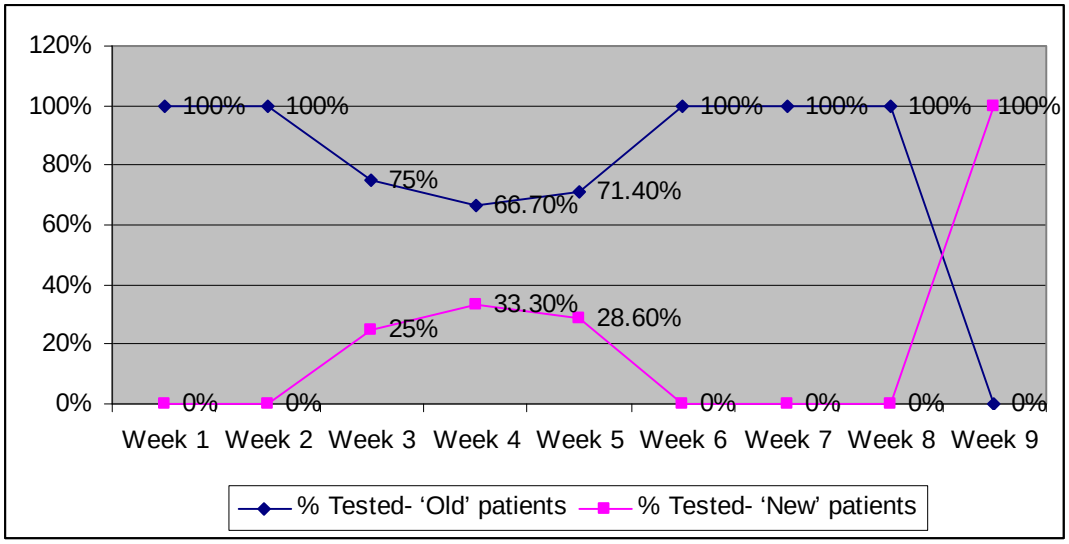
The case study presented in the graph below presents examples of the following barriers to improvement:

- Absence of standard timeframe and a system that explicitly identified the point in the treatment journey a patient received BBV testing and immunisation and how.
- Absence of a system that ensured every new patient did receive the intervention as standard and monitored if this was carried out.
- Absence of predictive care systems for BBVs that separated:
  - a) new patients from backlog and emergencies;

- b) BBV interventions and other testing that also required phlebotomy skills (e.g. liver function testing).

The graph below is an example take from one service that shows the percentage of patients who have been tested for BBV within month of starting a new treatment episode, out of all people who were tested during the thirteen weeks of the PDSA work.

Data show that it was clients who were tested for BBVs were more likely to have been services users who had been in the treatment system for some time, rather then patients starting a new treatment episode. Their need for testing was identified in a discussion with keyworkers, rather through a systematic system that ensures that every patient is tested for BBVs.

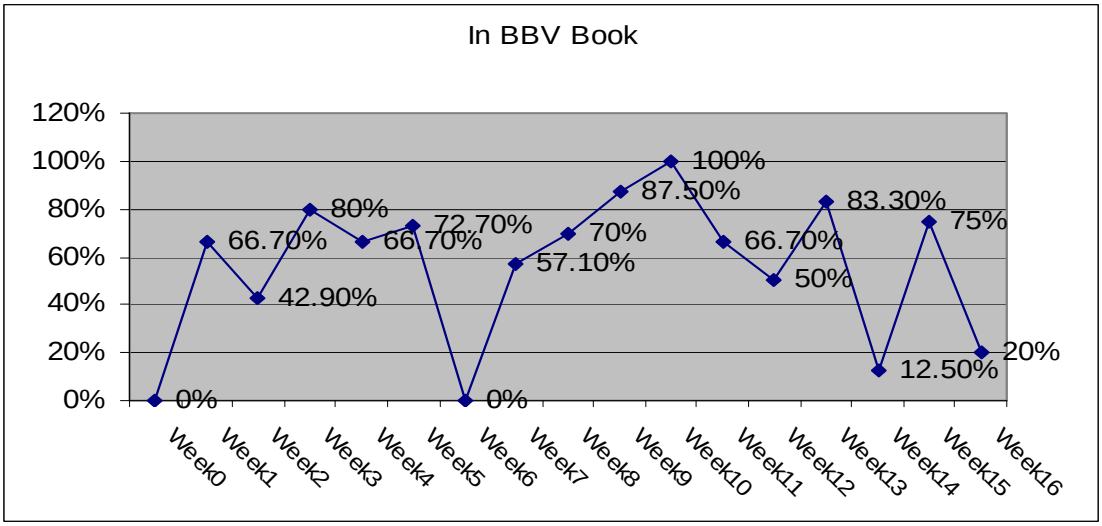


Go graph 10: Percentage of 'new' patients (new Tx episodes) tested versus 'old' patients

Obstacles to success: *Poor and unreliable internal referral systems Problems of 'falling through the net'*

The graph below shows another obstacle to improvement: the absence of a full-proof and effective process that ensures that patients do not 'fall through the net' and are effectively place outside the reach of BBV interventions early on in the treatment journey

It shows that only a fraction of patients who had accepted to be tested for BBVs were placed in a register that triggers appointments with the nurse.



Graph 10: Percentage of new service users placed on BBV register

PREVENT learning from PDSAs: What works and what are obstacles to improvements. General learning on what works at macro and micro-clinical levels

The aggregate learning from macro-level QI interventions and micro-level PDSAs can be summarised as follows:

- Clinical treatment systems and pathways can be improved without spending money. They may even save some waste.
- Strategic macro-level interventions are required to drive improvements at local levels and ensure standardisation of good practice and sustainability and on-going monitoring of performance.
- At micro-local-clinical levels: There is no single or blue print model for the improvement of BBV testing and immunisation in substance misuse treatment services. Treatment systems differ and need specific solutions at micro-levels.
- However, there are a set of principles and factors that must be in place by all drug treatment services, if improvements are to be made and sustained. Factors for success are listed in the table below. These form an important tool for the sustainability of project improvements.

Factors for improvement	Impact	Driver
The use of **care bundle** as default by all staff tackling BBVs, with all clients at all times to ensure standardisation of good practice and improved data collection.	Elimination of variation Standardised quality care	Macro Trust-wide strategic level
Central requirement to accurate, timely **data** recordind, as part of routine care.	Systems	Macro Trust-wide strategic level
Regular **analysis** of performance at macro and micro levels	Systems	Macro Trust-wide strategic level
Strategic level organisation-wide senior **leadership** commitment to improvement and their spread and sustainability across the organisation.	Psychology-Leadership at macro level	Macro Trust-wide strategic level
Testing for BBVs and immunisation is carried out as routine, **standard** and necessary practice, as part of package of care of every new patient. It is not a separate intervention, but part of assessment process of every new patient, every time.	Elimination of variation Standardised quality care	Micro local clinical level
Testing and immunisation are provided within a standardised point of the treatment journey (e.g. at comprehensive assessment / keyworking session) and within a **standardised timeframe** of the interventions (within 2 month of the start of a new treatment journey).	Elimination of variation Standardised care	Micro local clinical level
Testing for BBVs and immunisation is offered on an **opt-out** basis, albeit taking into account patients' right to refuse.	Psychology System redesign	Macro Trust-wide strategic level Micro local clinical level
Reduced points of care.	Patient-centred systems	Micro local clinical level
Predictive care systems, based on queuing theories; Develop separate system for new clients versus backlog and emergency	Systems	Micro local clinical level
In order to make improvements to a system **ask the patients**; they hold many of the answers.	Patient-centred systems	Micro local clinical level
Placing **the patient at the centre** of the improved system and processes	Patient-centred systems	Micro local clinical level
Patient convenience.	Patient-centred systems	Micro local clinical level

The **immediacy** of testing or immunisation after offer of test or vaccine.	System redesign	Micro local clinical level
To make improvements there is a need to address **resistance to change**. Regular feedback and reward of good results have shown to be useful tools.	Psychology Culture	
Human resource development. Clinical staff have the necessary understanding/ training to make improvements.	Clinical staff skills and competencies Human resource development	Micro local clinical level
The service has is an adequate level of **human resources** with competency to make improvements (including PGD training, phlebotomy skills or alternative testing methods such as dry blood spot testing). Prioritisation and eligibility criteria may need to be defined.	Clinical staff skills and competencies Human resource development	Micro local clinical level
Local-service level clinician or manager **leadership** on BBV in the substance misuse treatment service.	Psychology-Leadership	Micro local clinical level
Service level **quality improvement leadership** at level of senior clinician or manager of the substance misuse treatment service.	Psychology-Leadership	Micro local clinical level
Service level improvement '**champion**', with commitment and enthusiasm for improvement.	Psychology-Leadership	Micro local clinical level
Strategies to sustain improvements at times of pressure (e.g. staff shortages/absence)	Systems	Micro local clinical level

3.2 Please provide an assessment of the quality and robustness of the data that you have used, including comment on the validity and reliability of your measures, both qualitative and quantitative. This answer should cover:

- **What were the barriers or difficulties you encountered in obtaining good quality data?**
- **What assumptions have been made?**
- **What limitations are there in your analysis?**

You may refer to appendices to support your assessment.
Please include an appendix which describes the instruments and procedures (qualitative, quantitative, or mixed) used to assess

i. The effectiveness of implementation
ii. The contributions of intervention components to the effectiveness of the intervention
iii. Analysis of contextual factors
iv. Process measures, outputs, primary and secondary outcomes

400 words

Qualitative data

Focus group discussions were carried out by experienced researchers from Imperial College our academic partners, based on an agreed semi-structured topic guides. The guides were developed in accord with the key aims of the study and in consultation with the PREVENT project steering committee; they were refined progressively during the fieldwork. A thematic data analysis was carried out, using the NVivo computer package. An article based on this work has been submitted to a peer-reviewed journal.

The qualitative research was carried out with 50 patients, reflecting the diversity of the population in terms of gender, ethnicity, age group and drugs of choice. Discussions took place in inner as well as outer London venues to ensure that all local issues were covered. The most vulnerable groups of substance misusers were also targeted, namely those living in Homeless Hostels.

There are a number of well documented difficulties in research on people with substance misuse disorders, who often lead chaotic lives. The deal with this problem, the research was carried out by a person with experience with this group of people. We also gave incentives for attendance, in the form of a supermarket voucher, a practice common in research with vulnerable groups. Recruitment took place through clinical services and patient groups.

Quantitative data and statistical analyses

Data were collected via the bundle which also operated as a data collection tool with sound psychometric qualities. The same data collection tool was used in all services and for all PDSAs. It allowed for macro-level Trust-wide analysis.

A large body of data were collected and analysed for PDSAs through a data collection tool which included:
a) Questions from the NDTMS national dataset and KPI data collection requirement
b) questions developed by PREVENT and piloted for issues of reliability and validity.

Data collected by PREVENT through the bundles provided more comprehensive and robust information on BBVs than those collected nationally by the NDTMS.

PDSA data collected at local clinical levels were contemporaneous (current & live) and measured process that were subject to the changes made as part of the PDSA. They are therefore QI data and not research data.

PDSA data were analysed by PREVENT, typically on a weekly basis on a weekly basis, and fed-back to services.

Challenges- Baseline data

Only some good quality baseline data was available at the macro-Trust-wide level as well as at local clinical levels (data on the offer of Hepatitis C and testing, the offer of Hepatitis B immunisation and data on the number of vaccines given and the completion of the immunisation course).

However, other important baseline data were not available and which included data on the actual testing for Hepatitis B and C and HIV. The little existing baseline data were based on different local systems that were not comparable and in some cases not fit for purpose. Data on HIV in particular were absent, reflecting the drop of HIV from the list of priorities. Service generally had some of these data, but these were of poor quality and could not be used.

Where no baseline data was available at all, data were collected by the PREVENT team before implementing any changes and starting a PDSA to determine baseline measures.

3.3 What impact has this project had?

Please summarise the impact and outcomes that the innovation has had, including:

- **Who has benefited and how?**
- **How has the intervention contributed to building clinical teams'' skills in improving quality?**
- **How has it contributed to knowledge about how to engage clinicians in QI?**
- **Are there any other benefits that have emerged beyond the original scope of the project?**
- **Are there any disadvantages?**

You may consider the impact at a range of levels:

- *individual*
- *clinical community*
- *patients/service users*
- *organisation*
- *partner organisations*
- *health economy including commissioners*
- *national policy*
- *societal*

You may find it useful to use individual stories or quotes to emphasise your points.
1000 words

Impact and benefits

Impact at individual patient level

- More patients tested and immunised at the early stages of a treatment journey
- Improved prevention and reduction of morbidity and mortality from BBVs.
- Systems more convenient to service users; patient-centred care
- Improved adherence to treatment regimes and potential self-management
- Improved prognosis with early detection and treatment
- Better patient preparation for starting specialist tertiary treatment

Impact at micro-local clinical level

- Improved performance
- Improved patient outcomes
- Reduction of waste
- Improved systems

- Improved ability to meet commissioning targets
- Improved ability to meet Payment by Result Outcome Domains
- Improved BBV understanding and skills

At macro AOCD/ CNWL level

- Standardised and reliable BBV care across all Trust substance misuse treatment services
- Increased TRUST-wide ability to meet Payment by Results Outcome domains
- Better data collection system
- Better intelligence
- Improved performance
- Standardised good practice and reduction in variations at local levels.

BBV Prevention and Treatment in the UK and beyond

- Care bundles and Models for improvement that can be spread
- Identification of factors of success and obstacles to improvement of national relevance
- Improved data collection system for BBVs

Wider society

- Improved public health

- **How has the intervention contributed to building clinical teams'' skills in improving quality?**

Views from the Field: Clinicians taking part in PDSAs and QI work

We at Hillingdon Drug & Alcohol Services (HDAS) are very grateful to *Prevent* who have worked collaboratively with our team from the outset to help reorganise our BBV service.

Prior to *Prevent*, our BBV service seemed disorganised and had become increasingly fragmented since we introduced a new model, whereby multiple nurses coordinated the service.

Over 40% of drug users accessing our services were refusing BBV interventions. Amongst those who progressed to the initial Hepatitis B vaccination, completion rates (of all 3 vaccines) were as low as 17%.

Prevent arranged in-house whole-team BBV training using external trainers, who are expert in their fields.

With the assistance of *Prevent*, who conducted PDSAs, we introduced a number of measures to help improve processes. These included more targeted testing of service users most at risk of BBV and utilising a psychology assistant to manage the process, with a particular focus on ensuring that all patients accepting BBV testing are ultimately offered this and those who initiate the process are actively engaged to continue with it. A BBV care pathway was devised, which completely revised our previous processes.

Early data are very encouraging indeed: the process now appears 'near' air tight, which is impacting positively on increasing acceptance rates amongst those offered BBV interventions and maintaining clients engaged in treatment. This should ultimately impact on increased vaccination completion rates.

Dr Jeffrey Fehler; Consultant Addiction Psychiatrist; Hillingdon Drug & Alcohol Services

Other benefits that have emerged beyond the original scope of the project

- PREVENT provided the Trust the possibility to make improvements in a systematic way in a new and very challenging external environment.

- The project is helping the Trust and its micro clinical level services achieve the new Coalition Government's outcome domains for Payment by Results for substance misuse treatment services. These were not in place at the time of the tender and the initial PREVENT project plan.

- PREVENT raised the profile of Quality Improvement in the services in which PDSAs were carried out and at the level of the senior leadership of the Addiction and Offender Care Directorate. In particular, it brought to the agenda the notion of quality services at low cost.

Potential disadvantages

The project indirectly raised some expectation, which it could not meet, in particular in relation to support setting up a hepatology/liver clinic in a drug services, at least within the timeframe and up to this report.

We facilitated discussions between one substance misuse service and a hospital-based hepatology service and resources (a PREVENT staff member time for 0.1 FTE a week, for a period of 4 to 6 weeks). Although both sides were very enthusiastic, final pressures meant that –if this were to take place- more funding was to be found and more negotiations to take place at the level of Finance and Business management.

Despite this setback, alternative work will take place and involving both services. This is discussed elsewhere.

4. Discussion/ learning

4.1 Summary

4.1 Summarise the most important successes and difficulties in implementing your intervention and main changes observed in the quality of care; and in increasing clinical engagement and skills in Quality Improvement. *400 words*

4.2 Please explain how you established the clinical community; how you think it impacted on the success of your project; what was the added value of approaching the problem through a clinical community? *400 words*

4.3 Please tell us about your achievements, the challenges and the things that didn't work out quite as you planned. *800 words*

Your response to this question should cover the following points:

- What did you hope to achieve?
- Did you achieve it all or partly? If so what helped you to do so?
    - Was it the contribution of a particular individual or group of people that made the difference? Why was this important?
    - How did you get staff buy-in to carry out this innovation? Were any approaches more successful than others? Why do you think that was the case?
    - What have you learnt about how to engage clinicians in improving quality?
    - Was it an aspect of organisational culture, technology or policy (national or local) that helped you? Did the involvement of national/regional partners help or was this more of an obstacle?
    - Did you develop new ways of working as a clinical community – were there particular changes which helped you to work as a clinical community?
- If you didn't achieve what you hoped for, what were the reasons for that?
    - What were the challenges / barriers that contributed to this?
    - Were there any aspects of organisational culture, technology or policy (national or local) that acted as a barrier?
    - Did staff change or leave? What impact did that have?
    - What did you do to try to overcome the challenges? How successful were these efforts?

- Were your original ambitions realistic given available resources and timescales?

- Whether you were as successful as you wanted to be or not, what would you do differently next time?

This is your opportunity to tell us what worked well and what didn't work as well as you had hoped. The Health Foundation believes that there is as much learning to be gained from the things that haven't gone according to plan as those that have, so please be honest in your reflections.

Please use a narrative style and try to provide different perspectives; not only from the clinical lead but also from front line clinicians such as clinic or ward staff, partner organisations and patient experience quotes or stories.

4.4 Interpretation
Explore possible reasons for differences between observed and expected outcomes paying particular attention to components of the intervention and contextual factors that helped determine the effectiveness (or lack thereof).

Include the types of settings in which this intervention is most likely to be effective. Suggest steps that might be modified to improve future performance and finally review issues of opportunity cost and actual financial cost of the intervention (where possible). 400 words

Summary of successes and difficulties

The project has been successful at meeting its objectives and creating improvements in BBV interventions at the level of local clinical services as well as improvement at the wider Trust level. PREVENT was successful in making improvement despite a very challenging external context for NHS services. The project was able to adapt to these changes and work within a fluid and changing external context.

As PREVENT finished its operations, it has left behind standardisation of good practice across all services in CNWL and patients are now much more likely to be tested for BBVs and immunised against hepatitis B early in their treatment journey. PREVENT has also left behind a tool kit for improvement, which identifies factors that have shown to be drivers for improvement. This toolkit is relevant to all substance misuse services in the UK and learning from PREVENT will be spread.

The project took place at times of NHS staff low morale and insecurity, but the professional integrity of clinical staff and their duty of care to their patients played an

important part in their buy-in to innovation. Regular feedback and reward of good performance proved to be very successful approaches to keep clinicians and other stakeholders engaged with the project. Staff buy-in was also bolstered by quality improvement leadership at both macro and micro-levels and the very crucial role played by ‘champions’ of improvement at local levels. It is therefore not surprising that the loss of these leaders and champions due to job changes or illness had an impact on the project, often reducing the pace of change and willingness for innovation.

The project was helped by the fact that a host of government and professional documents stress the importance of the improvement of BBV interventions in substance misuse services. The monitoring of performance of services on elements of the BBV intervention by the National Treatment Agency meant that work was not required above and beyond the existing responsibilities of clinicians and managers. Towards the end of the project, this was bolstered by the fact that BBV immunisation was identified as an outcome domain for Payment by Results. To this was added the fact that local clinical services were able to use PDSA data to demonstrate to commissioners their improved performance at no added cost.

Some elements of the project were significantly more difficult to achieve. In particular, we were not able to develop work on interface between addiction services and tertiary BBV treatment services to the level we have initially hoped (sub-project three).

This was the result of the pressures of the changing external environment which required much more effort to be spent on sub-projects one and two dealing with improving BBV interventions in substance misuse services. The external climate also meant that there was less appetite for risk taking to the development of innovative projects that may require additional resources. In particular, we were not able to foster the development of a peripatetic hepatology clinic in a substance misuse service.

Overall, our limited work on pathways between addiction and tertiary BBV treatment services was probably mainly due to the fact that the initial tender was probably not realistic in what it could achieve. We now believe that this is a project in itself, that requires its own time and funding.

Nonetheless, PREVENT has had an impact on the quality of care and the pathways between secondary addiction services and tertiary BBV treatment services. PREVENT interventions make provide more efficient systems for referral to the tertiary sector. They also prepare patients for BBV treatment, thus improving their engagement and retention in these services.

Successes and challenges

As has been described earlier in the report, the PREVENT project has succeeded in a number of ways. Although we are delighted that the outcome measures determined at

the beginning of the project have been met, even more satisfying has been the project's benefit on the embedding of better clinical practice and quality improvement skills. We believe that the project has made an impact at micro and macro levels. We have closed the gap between actual practice and best practice.

With respect to PREVENT learning from work at macro Trust-wide level and embedding better clinical practice, the key success has been the development of the 'BBV bundle' and it's embedding in routine clinical practice by adding it to the electronic assessment pack. This also acts as a data collection tool, allowing us to interrogate BBV performance after the end of the project.

At micro- local clinical levels, quality improvement methodology has been show to be very effective in changing clinical practice. We have information on what works and what does not. Data collected systematically substantiate lessons learnt and conclusions reached. The clinical teams have been very supportive of quality improvement and have particularly welcomed the regular clinical feedback on their performance. The PREVENT project will be developing a quality improvement training package to ensure that the benefits of the project in this area are not lost over time.

Considering the difficulties, one of the early challenges was recruitment and this lead to delay in the project of around 6 months. Another early difficult was the realisation that the quality of baseline data recording was poorer than we had anticipated and that there was very significant variation between team on both clinical systems and clinical quality.

A further difficulty related to developing a cost-analysis model. Such a model would have significant traction with both local and national commissioners. We did not however have the expertise within the team to undertake the financial modelling required to produce a cost analysis data. This is a major drawback and will impact on the spread of the project findings.

We have just started working with an advisor from the Office of Public Management, provided to us by THF. We will be reporting on the findings to THF in September 2012, as agreed.

Establishing a clinical community

The PREVENT project set the ambitious goals of developing a clinical network between substance misuse services (part of a mental health trust) and HIV and Hepatology services (spread across several, competing acute trusts).

Developing the project team ot steering group proved the first step. Senior representatives from the Health Protection Agency, the Hepatitis C Trust and patient representatives joined representatives of all the provider organisations. This group has

met regularly and functioned well, forming a core of senior leaders who support the project.

One clear benefit of such a talented steering group was the ability to tackle complex problems for a number of unique perspectives. This brought a powerful problem solving culture to the group.

This network as been broadened by links between the services at the level of frontline services. This began by mapping the pathways between the different services and standardising the referrals processes. Training delivered by HIV and Hepatology staff to substance misuse staff helped develop knowledge, but as importantly, develop relationships between workers.

As the benefits of the project have become apparent, the clinical networks have 'spread the word' in a surprisingly 'organic' and efficient manner.

The value of the clinical networks will, I anticipate, extend beyond this project into other areas of care. The relationships developed during the course of this project will hopefully facilitate further cross-organisational working.

What worked and the things that didn't work out quite as planned.

Changing context

The main challenges facing the project have been mentioned earlier have resulted from the changes in the economic climate of the NHS at the start of the project. The abolition of the role of BBV specialist nurses at the start of the project and discussed in detail in section 1.4, also posed additional difficulties.

PREVENT had to adapt very quickly to this new and challenging context. The challenges for improvement were much greater than anticipated.

Timescales.

PREVENT is a very ambitious multi-organisational, multi-pathway project. In many ways it can be seen as three projects under one title. The complexity of the project and the fact that quality improvement methodology was new to most at the beginning, resulted in the 2 year timescale feeling insufficient. The cultural changes we have seen over the 2 years have been impressive but feel like the beginning of a potentially much bigger change. Had the project been delivered over 4-5 years then we believe much greater gains would have been accrued.

Loss of 'Champions'

Changes in substance misuse treatment managers and potential loss of QI allies or loss of treatment service 'Champion' leading the PDSA (including temporary loss through illness).

Data collection fatigue by substance misuse treatment staff.

Substance misuse treatment staff have a requirement of collection a considerable amount of data for the National Drug Treatment Monitoring System.

4.4 Interpretation
Explore possible reasons for differences between observed and expected outcomes paying particular attention to components of the intervention and contextual factors that helped determine the effectiveness (or lack thereof).

Include the types of settings in which this intervention is most likely to be effective. Suggest steps that might be modified to improve future performance and finally review issues of opportunity cost and actual financial cost of the intervention (where possible). 400 words

The differences between expected and observed outcomes overall centre around the following issues:

A blue-print model for improvement

It was the PREVENT team hypothesis and expected outcome of the project that a single blue-print BBV testing and immunisation model can be generated from the quality improvement work. This model would be disseminated and spread. The work proved this hypothesis wrong. There is no single model that can be transplanted and implemented in all services. Treatment systems are different and need different solutions. A single model would only be relevant if it was linked to additional funding that gave all clinical services an even start and resources. This was not the case. The PREVENT project adapted to create improvements in a real and current context of the NHS.

'What works' in making improvements is the implementation of factors and system changes that have been linked to success. These factors are necessary and can be spread and disseminated to different treatment systems.

The pace of improvement and project timeframe

The second important difference between expected and observed outcomes related to the pace of starting the project, the pace of improvement and variability by local clinical services in the pace of improvement. Some clinical services improved substantially did so well and quickly. Others struggled and are still on an improvement journey.

Ideally, a longer framework for the improvement project than provided to PREVENT would have been needed. PREVENT also started it QI work six months after first anticipated because of recruitment problems.

5. Resources to share

Please attach any information or materials created as part of your work. These help The Health Foundation to really understand your approach and to promote it to the wider world, for example, government, patient organisations and professional bodies. Information could include:

For PREVENT resources please see appendices attached

6. Plans for Sustainability

Explain what you have done and plan to do to ensure your work is sustained. In responding to this question please include the following points:

- **What have been the challenges to sustaining the work? How have you overcome them?**
- **What has helped to sustain the work into "business as usual"?**
- **What do you see as the main challenges to future sustainability of your work?**
- **What has been the impact of working through a clinical community and working with a national/regional partner?**

600 words

In order to ensure the sustainability of improvement of PREVENT after the end of the project and its spread across the Trust, the PREVENT team has worked at senior management strategic levels as well as working at micro clinical levels. We have achieved the following:

- The PREVENT bundles have been adopted by the Trust as a default position by all clinical staff with all service users. This is currently been integrated into the Trust's electronic case management system.

- Data collection and analysis at Trust level and clinical level are collected and analysed on a monthly basis.

- The BBV strategy of the Addiction and Offender Care Directorate has been redefined to include PREVENT improvements factors and lessons.

- Commitment from the Trust Board's BBV group (Chaired by CNWL Chair) also agreed to incorporate relevant PREVENT findings across all Trust services and not only Substance Misuse services (but also mental health and other).

- The factors for improvement identified by PREVENT and discussed above form an important tool for driving improvements at local clinical levels as well as at strategic levels.

Work towards end of the project

Because of the late start of the PREVENT, THF have agreed to the extension of the project to the end of September 2012. This period is intended to focus on sustainability and spread.

This will be carried out in the following ways:

Activity and description
Practice Tool- Quality improvement tool for BBV interventions in addiction services Practice tool developed to be used by all addiction, applicable to addiction services nationally. The tool includes the following section: • Quality improvement methods and tools • Improving BBV testing • Improving HBV immunisation • Improving pathways to and engagement with hepatology and HIV services • Summary of lessons learnt and recommendations We are currently investigating innovative ways of communication, specifically the development of this tool in an audio-visual format.
Post project analysis of sustainability: analysis of implementation of PREVENT bundles across all services of CNWL in all 7 London borough
Cost analysis Phase 2 Development of cost analysis work further with consultant from the Office of Public Management

7. Plans for Spread

7.1 **Plans for Spread**

7.1 Explain your plans for spreading the learning and outputs of this project.
400 words

7.2 How are you going to promote your innovation and convince others of its value?

Please provide a description of how you plan to promote your innovation and what you intend to achieve through doing so.
300 words

7.3 What advice would you give to someone attempting to replicate your work in another organisation / setting? In your answer to this question please consider:

- What levers should they employ to facilitate change?
- What barriers and challenges should they prepare for?
- What risks should they be aware of?
- Where should they target their efforts to enhance their chances of success?
- What should they do to ensure they are successfully measuring the effects of their intervention and producing robust evidence?

500 words

7.4 What do you see as the main challenges to the future spread of your work?
300 words

Spreading the learning

The PREVENT project has been ground-breaking in addressing some of the root problems that have impeded our ability to address a key issue in hepatitis C – the testing and treatment of drug users – and it shown how this can be done often at very little cost. The findings of this project will essential reading for every drug service in the UK

Charles Gore
Chief Executive
Hepatitis C Trust

- London Joint Working Group on Hepatitis C

    - Presentations were made by PREVENT in the two annual conferences of the group, as model of practice.
    - A joint statement made by the group was published in the Health Service Journal and included a contribution by and about PREVENT. http://www.hsj.co.uk/resource-centre/best-practice/care-pathway-resources/a-blueprint-to-improve-services-for-patients-with-hepatitis-c/5035911.article

- National Institute for Clinical Excellence (NICE)

We are currently in discussion with the group convened by NICE to provide guidance on BBV testing and immunisation and have agreed to share PREVENT findings with them.

- Ministerial visit

As part of her visit to the Chelsea and Westminster Drug Treatment Centre, Mrs Ann Milton- Permanent Under-Secretary of State for Public Health- was informed about the work of PREVENT and given some of it documents. A final report of the project will be sent to the Minister.

- Peer reviewed publications

    - A publication is submitted to peer-reviewed substance misuse international journal, based on the focus group is been (International Journal for Substance Misuse Policy)
    - Submission of articles to peer-reviewed QI and health service management journals. Discussions are taking place with Peter Lachman (QI advisor)

- National and International conference

    - London Joint Working Group on Hepatitis C Conference (2010 and 2011).

    - International Forum on Quality and Safety in Healthcare. Paris 2012

Advice PREVENT would you give to someone attempting to replicate the work in another organisation / setting:

Levers to facilitate change

- Engage and seek commitment at strategic levels from senior managers and clinicians at the onset of the project
- Regular feedback to provide 'live' evidence to clinical teams
- Reward improvements
- Link into national bodies/guidance

Barriers and challenges to prepare for

- Resistance to change by clinical staff and sometimes managers
- Changes/ reductions in funding in clinical areas where improvements are planned
- Service structural changes
- Low health staff morale
- Working in an insecure, changing environment
- QI at times of reducing resources
- Resistance to change.

Risks to be aware of:

- Slow pace of change in some instances
- Negative impact of changes in senior management personnel
- Negative impact of loss of an 'improvement champion' on driving improvements.

Where to target efforts to enhance their chances of success

- Efforts should be targeted at all levels if project is to be successful:
  - Buy-in from senior/director level managers at strategic level and senior clinicians.
    - At local clinical levels, encourage ownership of the project by a range of staff, including service administrators (who will have a crucial role in the facilitation of data collection).
    - Providing regular feedback and evidence;
    - Rewarding good performance (for example PREVENT provided cakes and other treats to staff at times of feedback. We also wrote letters of commendation to staff who have been instrumental to the improvement process and sending the letter to Trust senior managers.

How did PREVENT ensure that a project is successfully measuring the effects of the intervention and producing robust evidence: Advice to others

- Data collection system with sound psychometric qualities (validity and reliability)
- Same data collection tool to be used in all sites where PDSAs are taking place
- Data collection tool should not be an additional burden on clinical staff.
- Good data analysis and interpretation skills and experience on the team is essential
- Compliance in data collection for PDSA is essential. This will require the following:
    - Feedback on data collection compliance and reward where this is to case
    - Work with a clinical service's administrative staff as they often hold the key to improved data collection.
    - PREVENT staff aided in data collection, especially at the early stages of a PDSA.

The main challenges to the future spread of the PREVENT work

The importance of BBV testing and immunisation is well established by research and engrained in government policy.

However, the long-term human and economic cost of acting on BBVs means that BBVs are often not seen as a priority for investment by commissioners or action by clinicians or service users. This is exacerbated by the current external context described above.

Improving BBV testing and immunisation will necessary increase spending in the short-term, as more tests are carried out and more vaccines given. Commissioners and providers may want to avoid short term expenditure for long term gains and savings. However, the human and financial savings made by this work to patients and to society at large are understood by all.

8. Return on investment
8.1 Can you estimate the cost of the intervention and the benefits accrued?

8.2 What have been the cost implications to your work?

8.3 What were the main difficulties you encountered in identifying cost and benefits of your work?

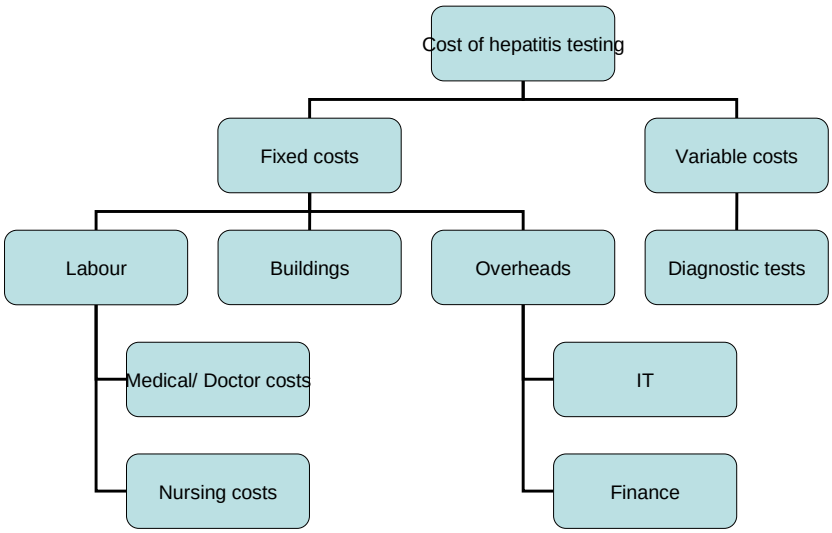
For those teams involved in the additional support from Springfield Consultancy please

include the results of the work and explain how you have or intend to use the information.
600 words

PREVENT's work on cost analysis continues after this report. The Health Foundation has recently given us the resources to develop a cost analysis model with the support of consultants from the Office of Public Management. The findings will be reported to THF in September 2012.

Some work on cost analysis has already been carried out. The project has developed a framework for ascertaining the cost of interventions for screening of patients for BBV in a specialist NHS setting. These are estimated costs but it would be reasonable to assume would reflect any good service with evidence based practice. This frame work is shown in figure 1 below

Fixed costs	Staffing
	Building Overheads
Variable costs	Diagnostics costs
	Client pathways costs
	Waste (e.g. DNA costs) 1. Delay: idle time spent waiting for something, test results, patient bed assignments, theatre preparation, medical appointments. 2. Re-work: performing the same task a second time, such as re-testing, re-scheduling, re-writing of patient demographic data, multiple bed moves. 3. Overproduction: manufacturing of products or information that is not needed, such as precautionary "defensive" medical tests, surplus medications, excessive levels of paperwork.

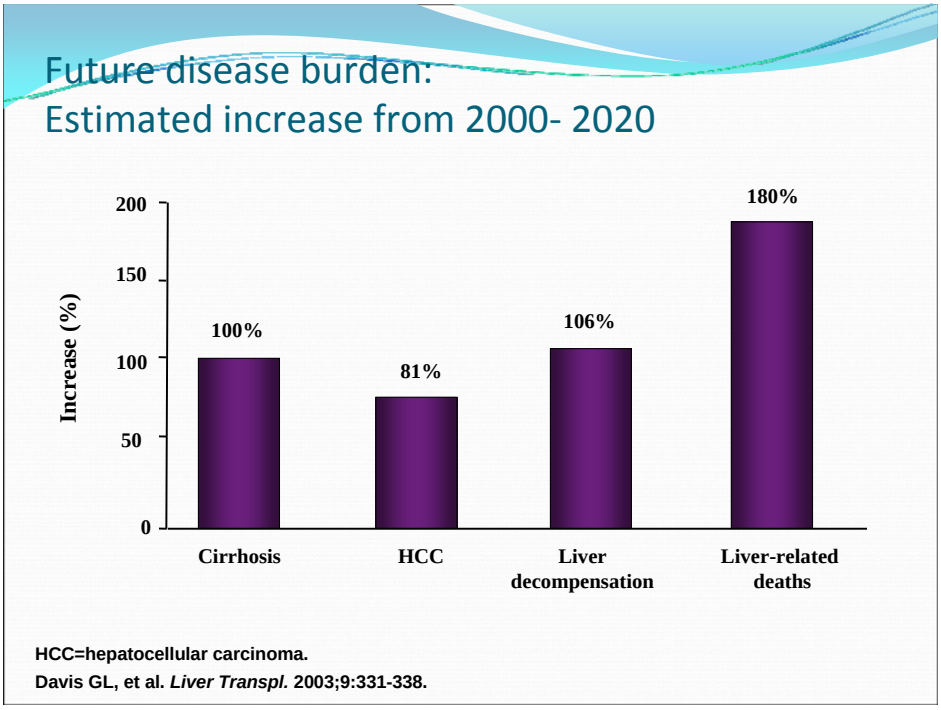


The benefits for the interventions are difficult to estimate in the current time frame, as most of them are long term and involve hypothetical models. As an example the benefits would be:

- By screening early detection of Hepatitis and HIV and hence early treatment, thus preventing long term ongoing health care costs. In the case of Hepatitis these would be due to treatments for complications such as cirrhosis of the liver and liver cancer. In addition economic costs would result from lack of productivity, poor quality of life etc.

- For example, a hepatitis C strategy was developed for Greater Manchester, based on a needs assessment exercise .Crude costing suggested that treating all the HCV-positive people in the area would cost £180m in drugs alone. While this is a large sum of money, a disease progression model showed that doing nothing would cost **£200m more** than treating this population.

- Recent cost-effectiveness research, based on a probabilistic cost utility analysis of long-term cost and outcomes measures in QALYs has shown that despite the possibility of re-infection of hepatitis C, providing anti-viral treatment to injecting drug users is the most cost-effective policy option (Martin at al 2011a). It also has a public health impact as modest rates of hepatitis C treatment among active injecting drug users could effectively reduce transmission (Martin et al 2011b).



- By vaccination for Hep B the benefits are the prevention of a disease with all the resulting benefits to individuals health, functioning and society

- By greater integration and changing the system of working /interface between Addiction and Hepatology/HIV services there will be less drop outs, greater treatment adherence and hence better outcomes. This will lead to saving costs in all areas.

Difficulties Encountered to date

- The lack of availability of a conceptual framework in the literature, for a UK setting mainstream NHS services, to develop Cost Effective or Cost Benefit Analysis

- The widely different ways services are delivered to intervene for BBV problems in various settings and at primary care and secondary care levels. This means a significant variation which are not easy to control for

- The benefits from interventions both at preventative level and after diagnosis are likely to result in long term. These can only be calculated by developing hypothetical economic models

- There is a need for input from a health economist to work with the team to develop further on the frameworks and models in a pragmatic way. This will lead to some costs being ascertained and these frameworks and models tested out in the sustainability stage after the project formally ends.

Planned work

The PREVENT team has recently started working with a health economist from the Office of Public Management and provided by THF.

We will be reporting this work to THF in September 2012. This work is also intended to be a central tenet of our spread and dissemination strategy.

We envisage that this model will enable providers to use the framework to enter costs in some different settings/scenarios and across primary, and secondary care. This will be in the first step at a local level to compile, estimated but valuable, costs and demonstrate value for money to Commissioners of service and Directors of Public Health. This is important as Addictions will from 2013 fall under the remit of Public Health.

We are privileged to have had the opportunity to go on this improvement journey.

9. Conclusions

The original aims of Closing the Gap through Clinical Communities were to

- build the knowledge and skills of clinical teams in how to make improvements in the quality of care
- contribute to the creation of a systematic body of knowledge concerning how best to engage clinicians in quality improvement activity
- stimulate learning about quality improvement amongst health professionals
- support clinical communities to make demonstrable improvements in quality by tackling known gaps between best practice
- support routine delivery of care

Reflecting on the previous sections of the report how well do you feel the project met these aims?
600 words

PREVENT has made a sustainable impact on the routine delivery of care at a macro level, namely in CNWL substance misuse services, not least because the adoption of its bundles by the Trust for use in all services. At local clinical levels, changes have also been made at the level of individual services, whereby new process, that have shown to be effective, have been put in place and are part of 'business as usual'.

Substance misuse service staff members (managers and clinicians) who have participated in PREVENT QI work now have an improved understanding of QI and one which is transferable. They now have better understanding of the factors that need to be in place for improvements to be made and can apply this knowledge to improve others areas of -health care.

PREVENT is a very complex project that operated at a time of large financial and structural changes in NHS substance misuse services and with a vulnerable and marginalised patient group.

We believe that we have been successful at meeting project aims in the following ways:

- We believe that the project has met its main aims or sub-projects (to improve BBV testing) and two (to improve hepatitis B immunisation). We have developed learning, based on good data. This learning is of national relevance to substance misuse clinical services in the NHS and outside.

- We have been less successful at undertaking direct quality improvement work jointly with hepatology and HIV clinical services, specifically PDSAs. However, we did develop tools that improve interface between substance misuse services and these tertiary services.

- We have training packages that on hepatitis and HIV infections that are of national relevance.

- We have met project aims by using Quality Improvement methods and tools and have been able to reach conclusions and recommendations based on these systematic methods.

- We have therefore contributed to building the evidence base, both in terms of BBVs and Quality Improvement.

- We have provided substance misuse services with tools and recommendations that help them meet:

- Payment by Results targets
- Commissioning requirements
- Improved patient care

- We have listened to service users and based much of the changes on their views of obstacles to good care and solutions for improvement.

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