Title: An evaluation of blood-borne virus (BBV) testing and vaccination uptake in an integrated drugs and alcohol service

Contents

Project Summary

In the 1960s, it was recognised that infection with a blood-borne virus (BBV) posed a significant threat to both patients and personnel in renal care facilities. Currently, the St. George Drug and Alcohol Service provides services to approximately 500 clients who face challenges with drug and alcohol abuse and addiction. Those addicted to opioids may get treatment in the community and the hospital [43]. Treatment options include counselling and support groups, prescription opioid pharmacotherapy, and withdrawal treatment. Clients with substance use disorders who inject drugs, for example, are more likely to get hepatitis C, hepatitis B, and HIV than those who do not use injectable drugs [45].

The availability of innovative hepatitis C medicines has improved healthcare results for clients in recent years while at the same time lowering the side effects of the drugs and the time and effort necessary to deliver them (Liu et al.). Due to the introduction of these innovative therapies and the acquisition of a FibroScan machine by the Service, BVB screening rates improved somewhat. Still, they remained low due to a shortage of practitioners with the necessary qualifications and resources in the community. As a consequence of the lack of a clearly defined BVB screening strategy, patients were forced to undergo testing on an as-needed basis, which was uncomfortable for them [43].

A further misunderstanding existed on where to refer clients who tested positive for hepatitis B and HIV and a lack of clarity regarding recording the client's authorisation and findings in the client's health records. It is imperative that BVB screening detect BBVs early and treat them as quickly as possible once they have been discovered. Consequently, the risk of transmission and the development of related illnesses is minimised due to this practice. As a result of the findings, the St. George Drug and Alcohol Treatment Facility recognised that a new approach was necessary to enhance BVB screening among new and current clients [44].

Several studies conducted in the United States have found that the incidence of hemolytic uremic syndrome (HUS) infection in dialysis units has remained consistent at 1 per cent per year for the ten years before 2002. However, the frequency of HBV and HPV infection in dialysis units has decreased significantly over the previous three decades. The great majority of renal healthcare workers in the United Kingdom are thus unlikely to have seen a BVB pandemic in a hospital-based kidney dialysis unit before [43].

Many people are getting haemodialysis, and patient migration from other nations is increasing. Aside from that, as the number of kidney patients who go overseas increases, rental units will have to become more attentive in monitoring the possibility of BVB infection. Renal units will need to grow more attentive in monitoring the likelihood of BVB transmission as time goes on, given the relative ease with which dialysis patients may travel overseas [46].

According to the National Institutes of Health, it has been observed that since the implementation of so-called "universal" or "standard" methods for the prevention of BVB transmission, there has been a significant reduction in the incidence of BVB infection in renal units, particularly in the peritoneal cavity (NIH).

Across the globe, there has been a rise in the number of reports of BVB infections in renal units, with data suggesting that many of these outbreaks may have been caused by gaps in high-quality infection control practices. This continues to hinder the implementation of efficient infection control practices. Several cases of individuals who had evidence of prior exposure to hepatitis B and native immunity (positive hepatitis B core antibody) and who had reactivated the infection in the context of substantial immunosuppression have been reported anecdotally in the literature, according to the National Institutes of Health [47].

In addition to other diseases and illnesses, some of the most critical hazards are those associated with haemophilia, hepatitis C, and HIV infections, to name a few. Many different viruses have been linked to diseases in patients and staff members at haemodialysis centres, with some of these viruses being linked to outbreaks at the facilities. The clinical importance of several other BVB, such as Hepatitis G and D, has recently been revealed to be greater among dialysis patients than in the general population, even though the specific form of these infections has not been determined [49].

Health care staff at dialysis units, even though they are less infectious than those working in hospitals, have been linked to epidemics of HCV and HIV, highlighting the need for infection control measures in these facilities. According to multiple studies, the likelihood of BVB transmission is inversely proportional to the quantity of virus present in a person's circulation at any one time. Throughout the guideline, we refer to the KDIGO guidelines for HCV treatment in the rental unit and the specific infection control strategies used in the renal unit.

The transmission of acute BVB infections is more contagious than chronic BVB infections. This guideline provides recommendations for identifying those at risk of contracting an acute BVB infection to reduce the rate at which the virus is transmitted. According to the authors, observations in vitro, case series, and observational clinical trials, all publicly accessible online, provide the majority of the evidence for the recommendations made in this research. Despite the considerable dangers associated with future BVB exposure, there is a low incidence of BVB in the population. This is primarily due to the low prevalence of BVB in the population. Whenever we make recommendations for future research, we decide not to propose interventional controlled trials that are unlikely to be viable in the foreseeable future unless necessary [43].

Research Approach

Project protocol was developed to clarify the processes and techniques for conducting systematic reviews and environmental scans to inform the recommendations contained in this guideline, the phases and methods for generating the proposals themselves, and the stages and processes for developing the recommendations themselves.

To determine the risk that patients may be infected with HIV, HCV, or HBV by HIV-positive health care professionals, systematic reviews were conducted for each of the Key Questions after the initial research was finished. To offer answers to the Key Questions, many further routine investigations were done, with the infectivity of each virus being studied about the source serum viral load at the time of exposure. The great majority of the research that formed the foundation for the systematic reviews was carried out from retrospective investigations or other descriptive studies. As part of our investigation, we used previously published systematic analyses of randomised controlled trials (RCTs), coupled with additional data, to determine the efficacy of reducing BVB transmission from healthcare workers to patients.

A needs assessment was carried out before forming the policy guideline to determine the breadth and importance of the themes covered. The St George Drug and Alcohol Service created a straightforward technique for blood-borne virus (BVB) screening via training to staff and the integration of the test into the first assessment of new clients. The method was implemented in the initial evaluation of new clients.

Results Summary

According to the National Centre for Health Statistics, structured therapy was provided to 468 patients in the first quarter of 2019/20. All of these service users received the Hep B vaccine at the time of their evaluation, and they were also tested for Hep C, Hep B, and HIV at the time of their regular treatment review meetings.

After following instructions to reduce interaction with and footfall into the service again, we had a persistently low uptake in the number of BVB interventions performed during the first quarter of 2020/21. Forty-two people were subjected to organised therapy during the second quarter of 2018. Because of patient assessments and frequent treatment review meetings, all of the patients were given hepatitis B vaccines and Hepatitis C, HIV, and Hepatitis B tests at the time of assessment. However, no one was Hep C positive due to the examinations conducted during the quarter under review. Service clients who have been identified as Hep C positive will continue to be supplied by the Hep C satellite offered by St George's Hospital, at least for the foreseeable future, it has been concluded.

Nonetheless, the Hep C satellite supplied by St George's Hospital remained open for service users who were found to be Hep C positive to get treatment. Four hundred thirty-nine persons underwent organised therapy during the third quarter. The Hep B vaccination was administered to all of these service users at the time of assessment, and they were also tested for Hep C, Hep B, and HIV at the time of regular treatment review sessions. Whenever duplicate episodes are identified, the information from the most current episode is used, and the same episode is removed from the total number of attacks in the database. A further percentage point was added to the number of BVB interventions completed in the third quarter of 2013. This resulted in more face-to-face visits with appropriate IPC measures in the early part of Q3 before the Tier 4 constraints. As part of the World Development Program's Hepatitis C testing and treatment initiatives, Gilead has continued to support the organisation. Hep C treatment was resumed in the third quarter of this year via the St George's Hep C satellite, which is providing treatment for Hep C and completing the treatment for two service users who were previously enrolled. The PCR for Hep C was detected in one service user who performed a BVB screening during the year's third quarter and was diagnosed with the disease (RNA). Following the referral, this service user was diagnosed with Hepatitis C and subsequently started treatment for the disease (during Q3).

Four hundred fifty-nine participants were assigned to organise treatment during the fourth quarter. The Hep B vaccination was administered to all of these service users at the time of assessment, and they were also tested for Hep C, Hep B, and HIV at the time of regular treatment review sessions. The findings for the whole year to date take into account duplicate episodes for the same service user and use the information from the most recent treatment episode to compute the overall number of attacks for that service user. We noticed a further decline in the number of BVB interventions during the fourth quarter, as we followed orders to reduce interaction with and footfall into the service once again. Hep C treatment was resumed in the third quarter of this year via the St George's Hep C satellite, which is providing treatment for Hep C and completing the treatment for two service users who were previously enrolled. A total of zero service users who underwent a BVB screen tested positive for Hepatitis C PCR during the fourth quarter (RNA). Gilead continues to sponsor programmes to encourage the uptake of Hepatitis C testing and treatment until the end of the fiscal year on March 31, 2021, when funding will cease. 374 people were on the caseload during the fourth quarter of the fiscal year 2019/20, and 374 of them received structured treatment throughout the time. These service users were supplied with Hep B vaccines and Hep C testing at the time of evaluation and after completing client information reviews conducted by the researchers (CIR).

Chapter 1

Introduction

Background of the study

The world has had an issue with drug misuse for decades. Hepatitis B virus (HBV), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) are some of the blood-borne viruses that can infect people who inject substances (HIV). Parenteral transmission is the most common method involving the exchange of needles, syringes, and other medical supplies. Viral hepatitis can appear in various ways, from a minor self-limiting viral disease to fulminant hepatitis, hepatocellular cancer, and death [1]. An early diagnosis and treatment improve the prognosis, reducing organ damage and the virus's propagation. Worldwide, 22.0 per cent of injecting drug users have HBV, 50.3 per cent of injecting drug users have HCV, and 17.9 per cent of injecting drug users have HIV [2]. People who use intravenous (IV) drugs in the United States have a prevalence of HBV of 65–71 per cent; the prevalence of HCV and HIV is between 27–90% and 1–20%, respectively, according to reports from the country [3].

A person infected with BBVs may spread the virus via their blood. HCV is an RNA flavivirus with six unique genotypes and more than 50 distinct subtypes. It is transmitted via contact with infected blood. It is a DNA virus member of the Hepadnaviridae family of viruses. These goods may include drugs known to cause hepatitis (inflammation of the liver). It is necessary to have been exposed to one of the viruses that cause the illness before entering the "acute" phase of infection. It is unusual for this exposure to lead to a life-threatening condition, but it is possible. In the early phases of the illness, 15% to 20% of people infected with HCV can get rid of the virus on their own. Even though 75% of the population is infected with the HCV virus, most persons infected either do not exhibit any symptoms or show just a few indications and symptoms. When it comes to chronic HBV (cHBV) infection, the person's age is a critical factor to consider. Chronicity rates among infections acquired as adults are fewer than 5 per cent, whereas chronicity rates among infections acquired during pregnancy are 90 per cent. Infection with cHBV, like infection with cHCV, is primarily asymptomatic; however, symptoms may cryptically manifest themselves if they occur. A patient's liver inflamed for an extended period may have histological abnormalities in the hepatocytes. Long-term alcohol use increases the risk of developing cirrhosis, liver failure, and hepatocellular carcinoma, among other diseases.

Infections with BBV are managed by combining international and national objectives and the availability of preventative and therapeutic medicines. HIV has long been a critical concern for public health experts in England because of its solid advocacy base. In part, England and other areas of the United Kingdom have fulfilled the Joint United Nations Programme on HIV/AIDS 90:90:90 goals thanks to effective antiretroviral medications and proactive case identification measures. PHE claimed that 92 per cent of individuals infected with HIV had been detected in that year, 98 per cent of those infected had taken medicine, and 97 per cent of those infected had successfully suppressed their HIV virus. [7] Health care providers in the UK may be proud of this accomplishment.

While progress has been made in recent years, attempts to reduce the burden of hepatic viral infection are still at an early stage. An outbreak of viral hepatitis worldwide claimed more lives in 2013 than any other cause of death. (1.46 million) in the US. In 2010 and again in 2014, the World Health Assembly adopted resolutions on "fighting viral hepatitis," as well as the 2030 "Agenda for Sustainable Development" resolution [8]. Even so, the Globe Health Assembly, on May 28, 2016, endorsed a "Worldwide Health Sector Strategy on Viral Hepatitis," which included the first-ever global objectives for viral infections in the world. The Sustainable Development Goals (SDGs) set a deadline of 2030 for governments to eliminate hepatitis viruses as a significant public health issue in their country. Because of the availability of a very effective and inexpensive vaccine, HBV eradication efforts have concentrated chiefly on prevention. Still, there is presently no cure for chronic infection, making prevention the most critical objective. All at-risk groups should be immunised with the indicated dose at the earliest opportunity. Prenatal screening is now routinely performed, and drugs to prevent mother-to-child transmission and therapies for chronic infection are now available as a framework for eradication.

It was, nevertheless, tough to completely eradicate HCV infection. Preventative measures were doomed to failure due to the lack of an efficient vaccination to combat illness. The extended duration (24-48 weeks) and genotype dependence on the effectiveness of interferon and ribavirin regimens in eliciting a sustained viral response (SVR) or viral eradication have traditionally been difficulties in the treatment of chronic HCV infection [10].

Consequently, pharmaceutical companies began researching and producing drugs that directly target the HCV virus's biological processes. Direct-acting antivirals (DAAs) were used in

conjunction with interferon and ribavirin as part of a triple therapy strategy that started in 2011 with the first generation of direct-acting antivirals (DAAs). Those who have been infected with genotype 1 illness, on the other hand, had some detrimental consequences. With the emergence of second-generation oral DAAs, the landscape of HCV treatment has shifted considerably. According to the researchers, after 8-12 weeks of treatment, these new treatments revealed more than 95 per cent SVR efficacy in patients with genotype 1 infection. There have now been second-generation DAA drugs targeting various virus genotypes. The recent discovery of pan-genotypic DAA combos has filled up the remaining gaps in the treatment repertoire.

As a consequence of introducing these new drugs, a new elimination strategy has emerged. The World Health Organization (WHO) encourages global case identification and DAA-based therapy combined with prophylactic efforts to reduce the spread of new infections [4,]. People actively propagating the virus are targeted for DAA treatment, which has been recommended as a paradigm for case detection and DAA therapy that might be cost-effective. All of the components have now been put in place to eliminate HCV. To reach this Public Health target, a strong political push for the WHO goals and the effective deployment of DAA-based medications for a large-scale treatment effort in England must be achieved.

Aims and objectives

Opt-out testing and treatment for hepatitis B virus (HBV) are complicated treatments that have been given design flexibility to improve delivery over time. With little information available to assist develop best practices for varied situations, the countrywide testing of the program had a muted success.

Research questions

This investigation is focused on the following question:

- What factors influence the acceptance of blood-borne virus (BBV) testing and immunisation in an integrated drug and alcohol service?
- Is a BBV test provided to every substance user?
- What can be done to raise the percentage of receptions offered a test and the percentage of receptions offered and tested?

Research objectives

The following are the research objectives:

- To assess the use of borne virus (BBV) testing in an integrated substance abuse and treatment program.
- To assess the prevalence of blood-borne virus (BBV) infection and vaccination in an integrated drug and alcohol program.

Structure of thesis

It consists of five chapters in total, the first of which provides an overview of the topic, the BBV testing technique, and the research methodology. When viewed as a whole, the four empirical chapters, which describe the research methodology and results, should be able to stand on their own. Finally, the key findings are summarised in the last chapter of this thesis, and future research topics are discussed. First, I present some background information on three blood-borne viruses (BBVs) that are often detected in substance users: hepatitis C virus (HCV), hepatitis B virus (HBV), and HIV/AIDS. This knowledge will serve as a foundation for the remainder of the book (HIV). Even though all three of these diseases are discussed, my primary focus is on HCV.

Consequently, further information about this viral infection is being made available. Following a description of the HCV eradication strategy, this paper investigates how people could contribute to achieving elimination targets. Finally, this chapter provides an overview of the current condition of things, emphasising the issues and changes that the country is now addressing and experiencing.

Chapter 2

Literature review

Prevalence

The proliferation of BBVs among people with HIV/AIDS is a significant public health problem. Hepatitis C virus (HCV) infects most people who inject drugs: 56% of those in Scotland, 61% of those in needle exchange programmes, and 52% of those in England and Wales [11]. HIV and HBV disease rates among PWID in Great Britain vary from zero to 1.4 per cent in Scotland and Wales and six to 18 per cent in Ireland; these infections are low [11].

Risk factors for blood-borne virus

Hepatitis B and HIV can be conveyed by blood or other body fluids. People who inject drugs have a significant risk of HCV transmission due to the widespread use of shared injecting equipment (PWID). Long-term heterosexual relationships don't increase the likelihood of HCV transmission, but multiple sexual companions and women who are HIV-positive or diagnosed with other sexual diseases can. Sex traders PWID and those who use cocaine and are under the age of 25 are more likely to contract HIV than individuals who do not engage in these activities. PWID are more likely to get HIV if they use sharing needles and other devices, have a long history of injection, inject often, and are females. The high frequency of HCV among PWID may be due to their ignorance of how the virus is transmitted. Patients with disorders are more likely to have HIV and hepatitis C than the general population [13]. There is a higher prevalence of sharing, lower condom use, sexual activity and sex trade among people who inject drugs (PWID) who suffer from mental health difficulties. Drug and sexual risk behaviours are also associated with developing depressive symptoms. Drug users are more prone to domestic violence than those who do not use drugs. Survivors of female partner violence are less likely to use contraception and more likely to share needles, have several partners, or trade intimate acts, all of which accelerate the spread of BBV. PWIDs' sexual and drug-using relationships should be considered when assessing BBV transmission risk behaviours [14]. Female drug injectors can share their needles or syringes with their companions because they feel more secure and personal, thinking that such encounters are less hazardous.

Policy and practise

Even though the overall recovery strategy has controlled drug policy for some time, different goals and objectives impact public health and BBV management policies and practices across major UK

countries. After the publication of The Path to Recovery: A New Approach to Addressing the United Kingdom's Drug Problem in 2008, recovery had become a prominent part of UK policy by 2010. According to the Rehabilitation Plan, which was released in parallel, the authors laid out a plan for how treatment will be supported in English and Welsh societies, including the development and use of recovery groups "Athletes who succeed at recovery ", A movement from harm reduction to recovery in the treatment and prevention of substance misuse in the United Kingdom is unclear over the past eight years. To witness how day-to-day routines change and adapt under a new paradigm [16]. There have been varying degrees of success in each country's HCV prevention and treatment action plans since they were initially released ten years ago. There is a focus on PWID in each country's action plan [17] to address the individual and public health consequences of HCV. More people being evaluated and successfully treated with the disease and more people undergoing care for HCV infection were all common goals of the plans. New tracking and remote monitoring were also a part of the plans. Other objectives of HCV action plans involve supplying more syringe exchange places (including outreach distribution, such as in Northern Ireland) and expanding the number of introducing supplies that PWID can access. Some contend that primary prevention has been central to HCV action plans because of this. Primary prevention strategies (including injecting) [18] are a requirement to reduce the hazards of drug misuse. Drug replacement therapy (OST; e.g. methadone or buprenorphine) and person-centred assistance, and also needle and syringe initiatives that offer PWID free injecting hardware (and supplies) to help reduce respondents were found, and the spread of BBV as well as assist people who want to stop trying to insert in the UK. In the UK, psychosocial interventions do not frequently improve PWID risk behaviours. Health care workers and peer educators are the key suppliers of harm-reduction information.

Prevention and treatment of blood-borne virus

However, despite advances in HIV treatment and pre-exposure prevention, an HCV vaccine is still a long way off. HIV and HCV infections among people who inject drugs (PWID) are reduced by OST and needle exchange programmes. PWID's HCV pervasiveness can be reduced with these initiatives. Still, new research shows that these decreases are modest. Psychotherapies are needed to further reduce HCV prevalence by informing PWID of transmitting risks and motivating them to reduce the high-risk associated with sex and drug-taking behaviours [19].] Despite the efficacy of OST in reducing the prevalence of BBV, PWID may still be at risk of developing or transmitting

the disease. A meta-analysis (SVR) demonstrated that HCV reinfection occurred in PWID at a rate of 2.4% per 100 person-years after effective HCV therapy and 6.4% per 100 person-years in those who confirmed injecting drug use after a continuously communicated response [20].

Latent infection rates among PWID were 1.7 per 100 person-years, and among those hospitalised due to injection-related reasons were 5.7 per 100 person-years, according to a recent retrospective record linkage research [21]. A large cohort study of 1170 PWID who obtained an SVR following therapy for HCV indicated that HCV-infected PWID was 10% more likely to be admitted or die from an injection-related cause in the first three years of therapy. As the number of SVR years increases, the number of injection-related hospitalisations and deaths increases. For injection-related complications, women were more likely to require multiple hospitalisations than men after SVR[22]. According to these findings, new research shows that "harm reduction programmes should also remain supported after treatment stops," according to these findings. PWID have shown modest impact from recent systematic and meta-analyses of psychological therapies to reduce HIV and HCV risk behaviours and conclude "no progress [has been made] in generating more effective interventions" and "multi-component approaches are necessary [23]." For HIV prevention among drug users, a recent Cochrane review found no significant differences between multi-session psychosocial interventions and essential educational treatments. However, in both groups, there was a significant reduction in risk behaviours before and following the study. Multi-session psychosocial interventions were found to be effective when compared to small control groups. Multi-session psychosocial therapy and single-gender groups were more beneficial for those in formal treatment.

Most harm reduction methods reduce the dangers of injecting equipment sharing, and unprotected sex [11]. To reduce injection scars and maintain vein access, people with intellectual disabilities (PWID) must use sterile injecting equipment. According to PWID, vein care and access guidelines must be non-judgmental. Sterilised injecting equipment is more likely to be retained by PWID, who plan and ensure access to sterile injecting equipment. They are also more likely to deliver clean needles to their sex partners. Protection practises and methods to avoid or plan for injection risk scenarios, such as withdrawal and lack of readiness, must be included in harm reduction activities. Disengagement, support networks, vein access and treatment, and image control all fall under the umbrella of what researchers call "symbiotic" aims critical for PWID and may help

patients avoid BBV. Strategies include using 'backup techniques', taking out loans, working with others, regulating drug intake, balancing drug intake with available money, and seeking help from a counsellor or psychiatrist. HCV-negative Preventative practices, such as norms governing normative injection procedures; planning and contingency preparedness to avoid disturbance of risk management; and the potential for flexibility to adapt to changes in normative procedures or intents [24], are outlined in PWID.

Chapter 3

Method of Analysis

The institutional evaluation was carried out by the Preferred Reporting Items for Systematic Reviews (PRISMA) checklist. The majority of this chapter is devoted to explaining how to collect and analyse data. However, the complete research design can be divided into three types of methodological choices, according to Saunders, Lewis, and Thornhill (2016): qualitative, quantitative, and mixed methods. This study should be classified as qualitative research due to the emphasis on analysing the Blood-borne virus (BBV) testing and vaccination uptake in integrated drugs and alcohol services. Qualitative conversations will not be limited to a single research stage; when quantitative measures are required to support or invalidate specific statements, they will be used. Even though the data collection will be based on a systematic review, this methodological decision will be treated as "qualitative."

The key themes for each research objective are the primary focus of this systematic review, which is conducted in two parts. As a result of this, a list of primary objectives was formed. By the norms of a systematic review, the researchers next reduced the field to the 15 most relevant publications and survey reports to focus on their most essential findings. Finally, the research goal was fulfilled by comparing and contrasting the findings with each of the study's objectives. However, to minimise duplications, the researcher ensured that the journals used in the literature review and thematic analysis were mutually exclusive. Compared to the other two approaches, inductive and abductive, Saunders, Lewis, and Thornhill (2016) suggest that this research's technique may be classified as deductive. To draw evidence-based conclusions about related study issues, rather than developing new hypotheses, the researcher will assess current hypotheses as additional confirmation rather than developing new hypotheses.

Compared to comparative analysis or secondary data-based numerous case studies, systematic reviews have several significant advantages. The objectives and goals of this investigation are clearly outlined. This study will only evaluate blood-borne virus (BBV) testing and vaccination uptake in an integrated drug and alcohol programme. A sufficient number of journal papers in the same fields of study have now been published due to this. There are two main reasons why a systematic review is appropriate for this particular research project.

Search Method

This study will employ a systematic review as its research technique because there are many survey reports in each of the primary subject areas. Moreover, a systematic review will be appropriate due to the tight definition of the aim and objectives.

According to the researcher, a systematic review differs significantly from a critical literature review, primarily due to the severe filtering and screening level of research articles employed in performing the systematic review (as opposed to a critical literature review). The PRISMA model, established by Saunders, Lewis, and Thornhill (2015), provided a complete description of how this process functions. To accomplish the objectives outlined in the research proposal, the researcher intends to use a similar selection of 15 journal articles from the same domain areas as in the previous research. A survey, even though some may argue that it is the most appropriate method of data collection, will not be possible due to a variety of constraints, such as the fact that people are reluctant to respond due to the pandemic and that organisations are preoccupied with planning for the worst-case scenario.

Other research projects will also be taken into consideration and assessed and critically analyse the findings of journal articles about themes and patterns identified in an initial literature review by the researcher. Specifically, a qualitative approach known as thematic synthesis will be employed to achieve success. It is intended that the initial literature from a wide range of sources will be used to develop a thematic structure, which will then be evaluated with new data from focused 15 articles, and solutions will be discovered by the flow of "theory to data," which means that this research will take a deductive approach to solve the problem.

Publications from four electronic databases, including Harvard Business Review, Google Scholars, JSTOR, survey reports, and Research Gate, have been cited in this article. Blood-borne virus (BBV) testing and vaccination uptake in an integrated drugs and alcohol service are among the services covered by these resources. Terms and keyword combinations have been utilised to scan the four electronica sources using the AND and OR operators to obtain a focused range of literature from the sources.

This commodity was sought after throughout the last few months of 2022. A search for queries was carried out to categorise articles containing various keyword phrases. Additionally, forward-looking quotations searches were conducted on the list of papers under consideration in

conjunction with this search technique, as described above. The bibliographic search includes scientific works that have been published up through April. Keywords such as blood-borne infections, testing, and immunisation were utilised to choose the titles and abstracts for the papers.

Reviews, letters, abstracts, unpublishing materials, and notes were among the categories of submissions disqualified from consideration. Studies in which the authors looked at the analysis of blood-borne virus (BBV) testing and vaccination uptake in an integrated drug and alcohol programme were the only ones considered. Only English studies were considered for inclusion in the quest.

Selection of study

After removing duplicated and scanned titles and abstracts for their relevance, a list of potentially qualifying publications has been compiled, downloaded, and transferred to EndnoteR edition X7 after being screened for significance. The relevant publications were evaluated individually by different researchers to determine whether or not they met the standards for incorporation. Initially, an investigator conducted the investigation, checked the title and abstracts, and deduced the compilation of data from collected data. Then, a second investigator and two authors analysed the entire report, concluding with the content assessments.

During this time, other writers contributed to the research of the articles and the writing of the handbook. Any discrepancies between the authors had to be resolved through a debate amongst all authors. Reports were also used when the title, abstract, or keywords suggested that the researchers evaluated blood-borne virus (BBV) testing and vaccination uptake in integrated drugs and alcohol services. The impermissible objects have been left out, and the reasons for their exclusion have been mentioned.

Inclusion criteria

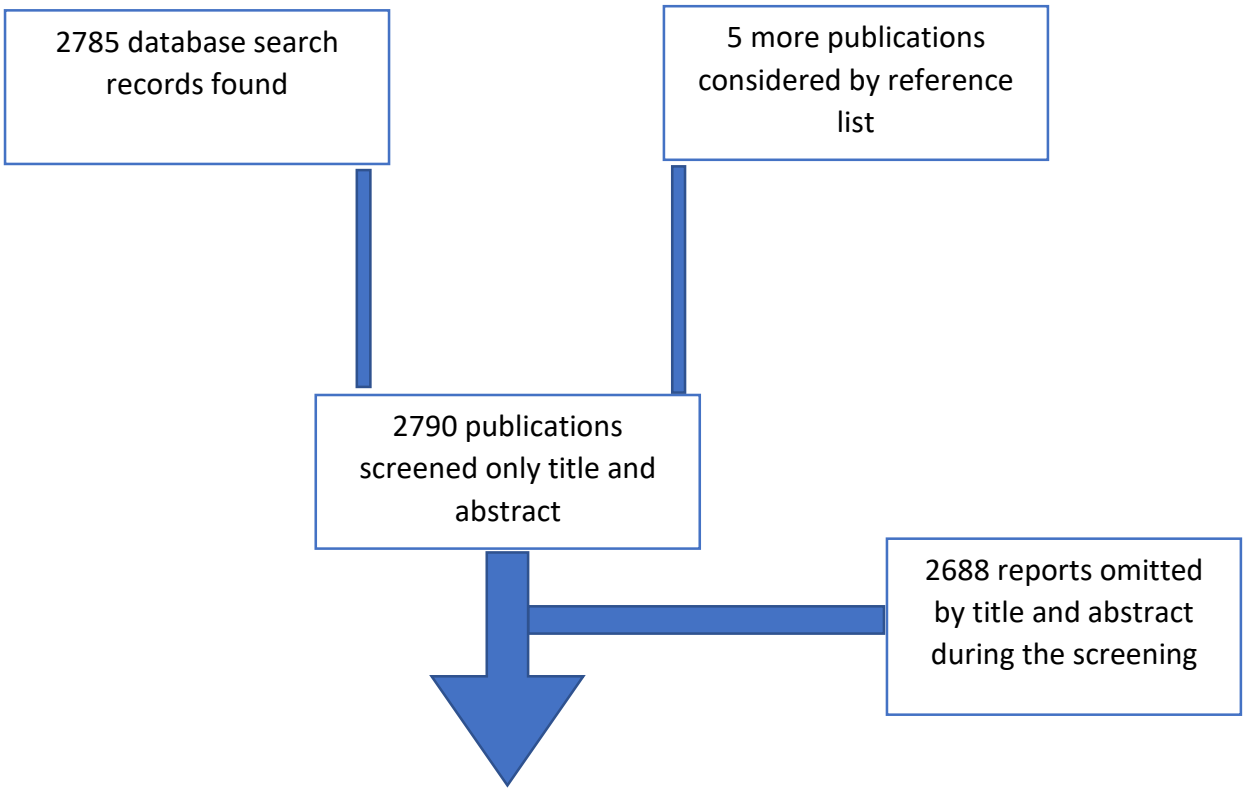
The evaluation of all reports was defined by the following criteria for inclusion in the final report: (1) the uptake of blood-borne virus (BBV) testing and vaccination in an integrated drug and alcohol treatment programme, (2) The study's participants were young adults between the ages of 19 and 25 and between the ages of 25 and 40 and above; (3) the study's age range measures were used because the respondents' ages ranged past the ages of 19 and 25 and between the ages of 25 and 40 and above; and (4) the study's age range measures were used because the respondents' ages ranged past the ages of 19 and 25 and between the ages of 25 and 40 and above. (4) The publishing

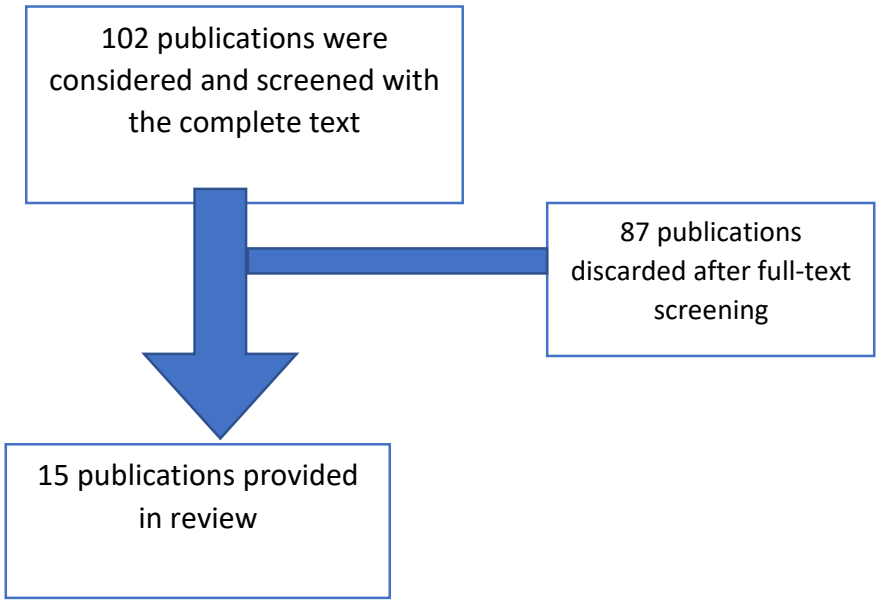
year has been shortened between 2013–to 2021, and (5) There were items in the English language that were available; (6) Articles are subjected to peer review.

Exclusion Criteria

Besides that, as per the following exclusion requirements, studies have been precluded: (1) teenage research participants; (2) questions about the patient's behaviour; and (3) power of peer or press. Distinctions in choices were debated before completion, and after taking into account the exclusion criteria, the articles found inadmissible were excluded from a list of related papers. A PRISMA flow chart recorded the selection process and the systematic inspection search.

Applying specific search parameters to the necessary data sources makes it possible to discover significant amounts of information quickly and easily. Finding reliable sources that include high-quality content and relevant documents is crucial while researching a specific topic of interest. The relevance and credibility sub-processes of the quality evaluation process are two of the most important. However, the next stage in the inclusion and exclusion procedure also considers part of the quality assessment and rigorous evaluation/sorting method used in the previous step. Screening/filtering This is referred to as Preferred Reference Items for Systematic Review and Meta-Analysis, according to Saunders, Lewis, and Thornhill (PRISMA). Though there were initially more than 2700 publications to choose from, the researcher reduced it to 15, so it could be deemed a generous sampling.





Data Analysis

According to Saunders, Lewis and Thornhill (2015), a data analysis strategy is a methodological decision. It is defined as follows: The user can choose from various quantitative, qualitative, and blended alternatives. According to the literature, data that has been quantitatively analysed through statistical methods and tools such as SPSS or Excel and then interpreted in terms of mean, deviations, variance, correlation coefficients, regression, and so on would be treated as if it had been analysed quantitatively. In contrast, data analysis that is restricted to themes, narratives, or grounded theories is referred to as qualitative data analysis. "Mixed methods" refer to studies employing quantitative and qualitative methodologies in the same investigation. Blood-borne virus (BBV) testing and vaccination uptake in integrated drugs and alcohol services will be conducted in this study, which will employ thematic analysis as a data analysis technique. The quantitative methodology was chosen as the primary methodology for this investigation.

Chapter 4

Results analysis

Introduction

This chapter discusses the results obtained from the survey reports of St Georges Hepatitis clinic. This chapter will analyse the data in the form of tables obtained from the clinic for Hep C testing and treatment in recent months.

Summary of the results

The data is obtained from St Georges Hepatitis clinic from 2018-to 2022. The data presented in the tables are divided into four quarters of each year.

BBV (Blood Borne Viruses) Services / Update (2018-2019)

BBV Checks	Target	Q1		Q2		Q3		Q4		FYTD	
		No.	%	No.	%	No.	%	No.	%	No.	%
Number of New presentations who are:											
Historic /current injectors		16	19.8%	14	12.5%	12	11.9%	16	10.1%	58	12%
Offered Hep B Test & Vaccination based on eligibility criteria	100%	76	93.8%	112	100%	101	100%	102	100%	391	98%
No. people completing Hep B vaccine course		10	12.3%	17	15.2%	10	9.9%	19	18%	56	14%
Offered Hep C test	100%	75	92.6%	112	100%	101	100%	102	100%	390	98%

Accepted Hep C test		15	18.5%	16	14.3%	27	26.7%	20	19.6%	78	20%
No. of new presentations:											
Offered HIV tests	100%	75	92.6%	112	100%	101	100%	102	100%	390	98%
HIV tests completed		15	18.5%	16	14%	27	27%	20	19.6%	78	20%
HIV tests – found positive		N/A	N/A	0	0%	1	3.7%	0	0%	1	1.3%
Referred to **Hepatology**		1	50%	0	0%	2	50%	7	80%	10	60%

The Hep C clinic at WDP is now fully functioning, and we have observed a steady increase in the number of people referred to this clinic for Hep C testing and treatment in recent months.

BBV (Blood Borne Viruses) Services / Update (2019-2020)

BBV Checks	Target	Q1		Q2		Q3		Q4		FYTD	
		No.	%	No.	%	No.	%	No.	%	No.	%
Number of Service Users on the structured caseload:											
Have been offered a Hep C test	100%	392	100%	377	100%	376	100%	374	100%	670	100%
Completed a DBST		86	21.9%	46	12.2%	50	13.8%	46	12.3%	228	34%
Number of SU active during quarter who		35	8.9%	36	9.5%	34	9.0%	34	9.1%	43	6.4

are Hep C positive - antibody status											
Referred to **Hepatology**		13	3.3%	8	2.1%	2	0.5%	2	0.5%	25	3.7%
Number of SU who are Hep C positive PCR (RNA) status	-	10	2.5%	8	2.1%	6	1.6%	6	1.6%	10	1.5%
Number of SU who have completed Hep C Treatment	-	5	1.3%	1	0.3%	1	0.3%	1	0.3%	8	1.2%
Have been offered a Hep B vaccination course	100%	392	100%	377	100%	376	100%	374	100%	670	100%
Have completed Hep B vaccine course		17	4.3%	23	6.1%	16	4.3%	13	3.5%	69	10.3%

During the fourth quarter of the fiscal year 2019/20, 374 persons on the caseload got structured therapy during the period. At the time of assessment and via the completion of client information reviews, all of these service users were provided both Hep B vaccinations and Hep C tests (CIR). Following are the most recent Hep B and Hep C intervention statuses for the active clients on the caseload throughout the quarter, as shown in the tables above. 46 clients enrolled in structured treatment in the fourth quarter obtained a BBV screening. According to the most recent local BBV overview report, 45 out of 46 clients who had BBV screening for Hep C antibody status returned negative, with only one client having their results returned positive. There were two new referrals to the St Georges's Hepatitis clinic due to this referral. Refer to the following section for information on the outcome of referrals to a hepatitis clinic [25].

BBV (Blood Borne Viruses) Services / Update (2020-2021)

BBV Checks	Target	Q1		Q2		Q3		Q4		FYTD	
		No.	%	No.	%	No.	%	No.	%	No.	%
Number of service users on the structured caseload:											
Have been offered a Hep C test	100%	383	100%	424	100%	439	100%	459	100%	706	100%
Completed a DBST		4	1%	14	3%	32	7%	18	4%	68	10%
Number of SU active during quarter who are Hep C positive - antibody status		35	9%	34	8%	34	8%	34	7%	37	5%
Referred to **Hepatology**		0	0%	1	0.2%	2	0.5%	1	>1%	5	1%
Number of SU who are Hep C	-	7	2%	3	1%	5	1%	5	1%	9	1%

positive PCR (RNA) status											
Number of SU who have completed Hep C Treatment	-	1	0.3%	1	0.2%	2	0.5%	2	>1%	6	1%
Have been offered a Hep B vaccination course	100%	383	100%	424	100%	439	100%	459	100%	706	100%
Have completed Hep B vaccine course		0	0%	6	1%	12	3%	6	1%	24	3%

Throughout the third quarter, 439 individuals received organised treatment. In addition to receiving Hep B vaccinations, all of these service users were provided Hep C, Hep B, and HIV testing at assessment and frequent treatment review appointments.

Until further notice, if duplicate episodes have been discovered, the information from the most recent episode has been used, and the duplicate episode has been removed from the total. As a result of providing more face-to-face appointments with suitable IPC measures in the early part of Q3, before the Tier 4 limits took effect, BBV interventions increased by another percentage point in the third quarter of 2013. Gilead has continued to support the World Development Program with projects related to Hepatitis C testing and treatment. The Hep C satellite supplied by St George's was reactivated in the third quarter of this year, providing treatment for Hep C and completing the treatment for two service users who were previously enrolled. One service user who underwent a BBV screening during the year's third quarter tested positive for Hep C PCR (RNA). As a result of the referral, this service user was diagnosed with Hepatitis C and subsequently began Hep C treatment (during Q3).

Throughout the fourth quarter, 459 individuals received organised treatment. In addition to receiving Hep B vaccinations, all of these service users were provided Hep C, Hep B, and HIV testing at assessment and frequent treatment review appointments. The results for the entire year to date consider duplicate episodes for the same service user and utilise the information from the most recent treatment episode to calculate the total number of episodes. During the fourth quarter, we saw a further decrease in BBV interventions, as we followed guidelines to reduce interaction with and footfall into the service once more. The Hep C satellite supplied by St George's was reactivated in the third quarter of this year, providing treatment for Hep C and completing the treatment for two service users who were previously enrolled. During the fourth quarter, no service users who conducted a BBV screen tested positive for Hep C PCR (RNA). Gilead continued to fund programmes to increase the uptake of Hep C testing and treatment until the end of the fiscal year on March 31, 2021.

BBV (Blood Borne Viruses) Services / Update (2021-2022)

BBV Checks	Target	Q1		Q2		Q3		Q4		FYTD	
		No.	%	No.	%	No.	%	No.	%	No.	%
Number of service users on the structured caseload:											
Have been offered a Hep B/C and HIV test	100%	468	100%							468	100%
Completed a Dry Blood Spot Test		18	4%							18	4%
Number of SU active during quarter who are Hep C positive - antibody status		31	7%							31	7%
Referred to **Hepatology**		0	0%							0	0%
Number of SU who are Hep C positive - PCR (RNA) status	-	5	1%							5	1%

Number of SU who have completed Hep C Treatment	-	1	0.2%							1	0.2%
Have been offered a Hep B vaccination course	100%	468	100%							468	100%
Have completed Hep B vaccine course		4	1%							4	1%

During the first quarter of 2012/13, 468 persons received structured treatment. In addition to receiving Hep B vaccinations, all of these service users were provided Hep C, Hep B, and HIV testing at assessment and frequent treatment review appointments.

During the first quarter of 2020/21, we witnessed a sustained low uptake in the number of BBV interventions performed. We followed directions to limit interaction and footfall into the service once more. For service users who have been identified as Hep C positive, the Hep C satellite supplied by St George's Hospital has remained available for Hep C treatment.

BBV (Blood Borne Viruses) Services / Update (2021-2022)

BBV Checks	Target	Q1		Q2		Q3		Q4		FYTD	
		No.	%	No.	%	No.	%	No.	%	No.	%
Number of service users on the structured caseload:											
Have been offered a Hep B/C and HIV test	100%	468	100%	461	100%					570	100%
Completed a Dry Blood Spot Test		18	4%	6	1%					24	4%
Number of SU active during quarter who are Hep C positive - antibody status		31	7%	31	7%					34	6%

Referred to **Hepatology**		0	0%	1	>0%					1	>0%
Number of SU who Hep C are positive - PCR (RNA) status	-	5	1%	5	1%					5	1%
Number of SU who have completed Hep C Treatment	-	1	0.2%	0	0%					0	0%
Have been offered a Hep B vaccination course	100%	468	100%	461	100%					570	100%
Have completed Hep B vaccine course in the quarter		4	1%	8	2%					12	2%

Throughout the second quarter, 461 individuals received organised treatment. The patients were all offered Hep B vaccinations and Hep C, HIV, and Hep B tests at the time of evaluation and during regular treatment review appointments. Even though no one was found to be Hep C positive during the testing during this quarter, St George's continued to make its Hep C satellite available for service customers who were found to be Hep C positive throughout the period under review.

Chapter 5

Discussion

Drug users are more likely to contract viral and bacterial infections, leading to serious health problems and even death. After bacterial infections, hepatitis C, HIV, and hepatitis B are the three most frequent drug-related illnesses. To reach hepatitis B goals, vaccination is the primary intervention. Vaccines must be made available to everyone, and that uptake is tracked across all populations in all nations and boosts childhood immunisation programmes. The frequency of HBV infection in the general population of the United Kingdom is low (less than 1%) [26]. Hepatitis B vaccination in the United Kingdom has been targeted since 1988 because of the low incidence of the disease. This is due to factors such as ethnicity and injecting drug use and factors such as where the person was born. PWID and individuals at risk of sexual assault are two of these groups (men who have sex with men and sex workers). Hepatitis B screening for pregnant women and immunisation for children at risk have been implemented in the UK since childhood infection accounts for an estimated 21% of all new chronic infections. In August 2017, the United Kingdom launched a universal immunisation programme for infants against hepatitis B [27].

Approximately 468 people received structured therapy in the first quarter of the fiscal year 2019/20, according to data from the National Center for Health Statistics. Everyone on this list had the Hep B vaccine during their evaluation. They were also tested for Hepatitis C and B and HIV at their regular treatment review meetings, which they regularly attended [28]. Following the instructions to decrease interaction with and footfall into the service once more, we experienced a continually low uptake in the number of BVB interventions performed during the first quarter of 2020/21, despite our efforts. It was discovered that 466 persons had been subjected to organised therapy during the first quarter of 2018. Because of the frequent treatment review meetings and patient assessments, all of the patients were given hepatitis B vaccines and Hepatitis C, HIV, and Hepatitis B testing at the time of their evaluation. As a result of the examinations conducted during the quarter under review, no one tested positive for Hep C. It has been determined that service clients recognised as Hep C positive will continue to be supplied by Hep C, at least for the foreseeable future.

Despite this, the Hep C satellite remained operational, allowing service customers who were discovered to be Hep C positive to receive medical treatment. Four hundred thirty-nine individuals

received organised therapy during the year's third quarter. All of these service users received the Hep B vaccination at the time of their evaluation, and they were also tested for Hep C, Hep B, and HIV at the time of their regular treatment review meetings [29]. The information from the most recent episode is used whenever duplicate episodes are detected, and the episode in question is eliminated from the total number of attacks in the database. In the third quarter of 2013, an additional percentage point was added to the total number of BVB interventions that were completed. There were a correspondingly higher number of face-to-face encounters with suitable IPC measures in the early part of Q3 before implementing Tier 4 limitations. Gilead has continued to assist the World Development Program's Hepatitis C testing and treatment programmes as part of the organisation's overall Hepatitis C strategy. It was decided to restart Hep C treatment in the third quarter of this year, which will provide therapy for Hep C and the completion of treatment for two service users who had previously registered in it. One service user who underwent a BVB screening during the third quarter of the year was found to have Hepatitis C and was subsequently diagnosed with the condition, according to the results of the PCR (RNA). Because of the recommendation, this service user was diagnosed with Hepatitis C and began treatment for the disease shortly after (during Q3).

Participants were assigned to coordinate therapy during the fourth quarter, with 459 assigned to this responsibility. All of these service users received the Hep B vaccination at the time of their evaluation, and they were also tested for Hep C, Hep B, and HIV at the time of their regular treatment review meetings. This year's findings consider duplicate episodes for the same service user and use information from the most recent treatment episode to compute the total number of attacks for that service user throughout the year. During the fourth quarter, we witnessed a further decrease in the number of BVB interventions, as we followed directives to restrict interaction with and footfall into the service once more. It was decided to restart Hep C treatment in the third quarter of this year, which will provide therapy for Hep C and the completion of treatment for two service users who had previously registered in it. During the fourth quarter, 0 service users who had a BVB screen tested positive for Hepatitis C PCR (RNA). As of March 31, 2021, Gilead will continue to sponsor programmes to increase uptake of Hepatitis C testing and treatment until the end of the fiscal year, at which point funding will be terminated. An overall total of 374 people were assigned to cases during the fourth quarter of the fiscal year 2019/20, with 374 receiving structured therapy during that period. After completing client information reviews done by the

researchers, the researchers provided these service users with Hep B vaccines and Hep C testing at the time of evaluation and after they completed the client information reviews (CIR).

In the UK, drug services are leading the charge in providing hepatitis B vaccines to people who inject drugs (PWID) [30]. According to available data, funding for adult and adolescent drug and alcohol treatment dropped between 2018–2019 and 2019–20. It is the responsibility of local governments in England to procure drug and alcohol services from the central government and get a public health subsidy. Drug and alcohol services have had to compete for resources with other public health objectives because this funding is not protected. Regular retendering is common when procuring these services, which might cause delays in their delivery. Local health boards and three NHS trusts in Wales provide drug and alcohol treatment services to the country's people. Strategies for drug and alcohol abuse are developed and put into action by local health authorities within these boards. Northern Ireland's health and social care systems are fully linked, ensuring promptly providing services. As many organisations are involved in the procurement of services utilised by PWID, it may be challenging to fund better delivery of the hepatitis B vaccine for PWID[31].

It has been suggested that contingency management can be used to enhance vaccination uptake (CM). This is done by rewarding people when they do what they're supposed to be doing. CM can be tailored to meet the specific needs of each patient, whether it is used alone or in conjunction with other therapy modalities. Both reward-based and voucher-based forms of CM are commonly used [32]. Addiction treatment centres have found this incentive-based approach cost-efficient and effective in motivating heroin addicts to complete their hepatitis B vaccine dosage. CM has been discussed, and guidelines have been produced, but it has not been widely adopted in the U so farK. To successfully deploy CM, several factors must be considered, including the training of staff and the implementation of comprehensive monitoring systems [33].

According to our findings, most hepatitis B vaccinations were obtained from drug treatment facilities. Because of the 2013 prison vaccination programme in England, services were the most commonly reported sources of vaccine doses in an earlier survey from 2015. Although drug treatment services have been overtaken, NSPs remain vital to hepatitis B vaccination distribution [34]. Some of those at risk of injecting before beginning can be reached by prisons. NSP can reach persons who have recently started injecting and are thus at greater risk of developing HIV. After

injecting for the first time, a majority of PWID in the United Kingdom report using an NSP within a few weeks after commencing. As a result, the fact that NSPs were the most regularly used service by people who reported not having been vaccinated is cause for concern; 81% had used an NSP in the year prior [35].

Fewer people said they had been vaccinated at their primary care physician's office or an emergency room. It's possible that people who inject drugs aren't telling health care providers about their habits out of fear of unwanted reactions. Vulnerability is exacerbated by structural impediments, limiting access to services. According to our findings, primary and emergency care settings should engage more with PWID, who use these facilities and offer vaccinations more frequently. Health care professionals in these settings may also benefit from additional education to do this effectively [36].

We found that, based on our data, despite contacts with services that potentially provide HBV vaccination to high-risk populations in the previous year, a large percentage of vaccine-eligible PWID did not receive a vaccination during service contact. As a result, there is a potential to raise vaccination rates in all health care settings.

Chapter 6

Conclusion and Recommendations

Innovative hepatitis C treatments have improved healthcare outcomes for patients in recent years while reducing the adverse effects of the drugs and the time and effort required to administer them (Liu et al.). These new medications and the purchase of FibroScan equipment have helped boost BVB screening rates. Despite this, the numbers remained low due to a scarcity of professionals in the area with the requisite training and resources. When there was no clearly defined BVB screening method, patients had to undergo testing on an as-needed basis, which they found to be unpleasant. According to recent research, the frequency of blood-borne viruses such as Hepatitis B and C and HIV is higher among injecting drug users than in the general population. For example, the prevalence of hepatitis C among injecting drug users might be up to 5 to 10 times greater than in the general population. Blood-borne viruses can result in considerable morbidity and even death if they are not recognised and treated immediately. Chronic infection with Hepatitis C can lead to liver diseases, such as liver cirrhosis and fibrosis, and end-stage liver disease and liver cancer, all of which can necessitate a liver transplant or even result in death [37].

According to the CDC, many injecting drug users may not be aware that they are infected with a blood-borne virus, which may put them at risk of unintentionally spreading the illness to others. Without a diagnosis, people cannot seek specialised attention or treatment for their condition [38]. Infected people may be treated once the infection has been identified and if the treatment is appropriate for their situation. Treatments can make a significant difference in the course of the disease. A considerable impact on the risk of morbidity, health outcomes, and mortality associated with these interventions is possible in some circumstances. Detecting infection at an early stage will assist in reducing the dangers associated with living with a virus, such as the development of liver disease. This has the potential to improve treatment outcomes as well. The specification included the provision of BBV screening and access to Hep A and B vaccines. Following a discussion of their knowledge and recommendations, it was determined that offering the combination vaccine to drug and alcohol clients would be a more appropriate intervention [39].

Patients who tested positive for HIV and hepatitis B were not correctly referred to the appropriate treatment centres, and there was confusion about how to document the results of the tests. Detection and treatment of BBVs must be prioritised to prevent the spread of the disease. As a

result, this technique reduces the likelihood of disease transmission and the emergence of associated disorders. The findings determined that a new approach was needed to improve BVB screening among new and current clients. Even though the service lead would prefer the programme to be at the point where 100 per cent of clients are routinely offered and then screened for blood-borne viruses and then go on to accept the offer of vaccination, this is not currently the case. It was critical to recognise that launching a new service programme will take time before it becomes fully operational and practical [40]. Even though many of the NECA service's employees were familiar with the concept and rationale behind blood-borne virus screening, implementing the programme has nevertheless been a learning process. It has taken time for both the workforce and the client group to grow comfortable [41].

Additionally, even after a blood-borne virus programme has been fully integrated into a service's delivery, there may always be some clients who do not wish to take advantage of the opportunity to be screened or vaccinated. This is due to their preferences. The importance of providing staff with training on the most effective methods for engaging clients in discussions about screening, providing clients with information on the rationale for why the offer is made, and embedding and providing several stages throughout the care pathway where this offer is repeated are all critical considerations [42].

The inclusion of questions about blood-borne virus screening during the service admissions process and at critical stages throughout their treatment pathway, such as when a client moves between different stages of treatment, can help services maximise the opportunities to raise BBV testing with clients. Increasing the number of possibilities for service to raise and give blood-borne virus screening and immunisation to a client can help maximise the number of opportunities for the service. Having the backing of the local commissioners has been essential in this process. In addition, having this requirement in the service specification from the beginning, through the necessity to provide a blood-borne virus screening and immunisation service, has been beneficial. To maintain a constant discourse with local commissioners once the project plan was implemented, it was necessary to maintain a regular communication channel [35].

Blood borne diseases are still a threat to people with immune deficiencies who have not been immunised. It is necessary to develop and test new and more efficient methods of delivering the hepatitis B vaccine to this population. It is expected that additional resources will be required to

increase uptake, but securing these now appears to be a challenge. There will also be a need to improve performance monitoring by building improved information systems that allow for the efficient, accurate, and timely recording of data across and across services. The elimination of blood borne diseases among PWID through vaccine coverage may be attainable as part of the overarching aim to abolish viral hepatitis by 2030. Still, it is likely to necessitate modifications in delivering care for this population.

Practical implications

Even though many policymakers and practitioners assumed harm reduction information about BBV transmission was routinely discussed with critical employees in drug services and practitioners in needle exchange and specialised services, PWID confirmed that this was not always the case. Because of cuts in services and the lack of opportunity for harm reduction in pharmacy needle exchanges, the substance use workforce may have been de-skilled. Alternatively, the recent move in drug policy from harm reduction to recovery may mean that people who aren't in treatment aren't being met with the attention they require. To improve vein care and avoid BBV, harm reduction services should ensure that the intervention content is offered to PWID regularly. UK policymakers should consider the need for drug consumption and injection facilities.

Recommendations

People who inject drugs and new injectors (particularly those injecting novel psychoactive substances) need to be better understood to guarantee that important BBV transmission messages are targeted to their specific requirements. After finding it hard for these groups of PWID to be included in our research, we recommend that ethnographic research be conducted to understand their specific concerns and barriers better when it comes to accessing help, advice and treatment, as well as what mode of delivery would work best for these groups. For a future feasibility study, we propose tailoring the intervention to the specific demands of chemsex (the use of psychoactive chemicals before or during sex). Future quasi-experimental worker training trials will assess the individual delivery of intervention content supplied at needle exchanges and adapted to individual PWID requirements.

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