Short Communication

An experience using historical hepatitis C data to Re-Engage: Possibilities and pitfalls during the COVID-19 pandemic

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ABSTRACT

Objectives: Public Health England (PHE) aims meet the WHO target to eliminate hepatitis C as a public health concern by 2030. One aspect of this strategy is to use historical surveillance data of anti-HCV positive patients identified by PHE to re-engage with offers of PCR testing and treatment if RNA-positive. Operational Delivery Networks (ODN), who deliver Hepatitis C treatment across 22 regions in England, are responsible for enacting this initiative. This study aims to evaluate the effectiveness of using this data with regional PCR results to re-engage HCV-infected persons in the West Midlands region of England.

Study design: A longitudinal prospective study using historical surveillance data.

Methods: A dataset of historical anti-HCV positive antibody patients provided to the ODN by PHE was cross-referenced with HCV RNA data from 01/01/1996 to 01/01/2019 from five laboratories across the West Midlands. Letters were sent to the general practitioner and to the patients who were HCV RNA positive to invite them for repeat testing and treatment to achieve cure.

Results: From a dataset of 4540 anti-HCV antibody results, 31.7% (n=1440) had a PCR result: 48.1% (n=693) were PCR positive for HCV RNA. 693 letters were sent to GPs with responses from 14.2% (n=99). By May 2021, only 212 patient letters were sent (due to significant interruption by the COVID-19 pandemic) and 11.3% (n=24) replied, 17 presented for PCR testing and 4 were found to be viraemic. To date, one patient has achieved cure and three have completed treatment awaiting confirmation of cure.

Conclusion: The use of historical anti-HCV antibody results can be used to successfully re-engage people into testing and treatment for hepatitis C, albeit with modest gains.

Hepatitis C virus (HCV) causes chronic hepatitis in 55–85% of those infected, leading to liver cirrhosis and hepatocellular carcinoma in 15–30% of this subpopulation [1]. In 2015, the World Health Organisation (WHO) estimated that 71 million people were living with chronic HCV infection and an estimated 399,000 deaths occurred globally from the sequelae of infection in 2016 [1]. HCV infection presents a significant but preventable burden of morbidity and mortality. The advent of highly effective Direct Acting Antivirals (DAAs) has significantly improved outcomes in those with chronic infection with cure rates >90% for most patients [2].

The ‘Global Health Sector Strategy (GHSS) on Viral Hepatitis 2016–2021’ adopted by the World Health Assembly in 2016 set out an initiative to eliminate HCV infection as a public health problem by 2030; this has been adopted by the United Kingdom (UK) [3,4]. In 2020, 118,000 people were estimated to be living in England with chronic HCV infection; prevalence is relatively low and confined to ‘hard-to-reach’ groups such as people who inject drugs (PWID) [3]. Interventions are targeted against prevention of transmission, increasing access to diagnosis and providing treatment with DAAs. The responsibility for the co-ordination and administration of DAA therapy in England lies with 22 regional ‘Operational Delivery Networks’ (ODNs). These use a ‘hub and spoke’ model, whereby treatment decisions are taken by the hub or

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spokes, and the regional ‘hub’ has responsibility for co-ordination of DAA delivery across the region.

Since 2015 prevalence of HCV infection in the UK has fallen by 33% with a 25% reduction in HCV mortality, exceeding 2020 targets set by World Health Assembly in 2016 [3,4]. In order to reach the 2030 targets, Public Health England (PHE) and National Health Service England (NHSE) have co-ordinated a re-engagement exercise to identify and treat HCV infected people using historical surveillance data [5]. To this end, PHE has been granted Caldicott permission (the authority on information governance for the Department of Health) to share datasets composed of the details of persons within their region who have previously tested antibody-positive for HCV (anti-HCV) with the ODN lead clinicians. They have been supplied with a dataset for their region by PHE within a memorandum of understanding.

Although innovative HCV elimination strategies are underway across Europe, there is minimal literature evaluating the use of surveillance data in the re-engagement of HCV infected people [6]. The aim of this retrospective study was to evaluate the feasibility of using this historical data in our region in the reengagement of persons who have previously tested anti-HCV positive, including their willingness to receive and complete treatment, and remain HCV RNA negative at 12 weeks, termed a sustained virological response (SVR-12).

The West Midlands ODN was supplied with PHE Surveillance data compiled using the PHE Second Generation Surveillance System. It outlined a list of people who have tested positive for anti-HCV antibodies in NHS laboratories between 1996 and 2017 in England. This data had been cross-referenced with the NHS Spine Patient Demographic Service (PDS) and other national surveillance databases to filter through, those who are still alive, registered with a General Practitioner (GP), not already in contact with specialist services and have not received DAA therapy. PCR results were requested from four NHS and one PHE laboratory across the West Midlands region (University Hospitals Birmingham NHS Trust, Sandwell and West Birmingham NHS Trust, University Hospitals of North Midlands NHS Trust and PHE Laboratory Birmingham); these laboratories were selected as they contributed the largest number of results to the PHE dataset. These were cross-referenced with registered treatment outcomes from the ODN database and clinic outcomes at the hub Hepatitis clinic to exclude those who were cured by antiviral treatment or spontaneously cleared. Paediatric patients (less than 18 years of age) were excluded and referred to the regional

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**Fig. 1.** Flow diagram of re-engagement using letters addressed to general practitioners (GP) and patients in the West Midlands ODN. * Of the 17 deemed not suitable to contact by the GP: 4 treated elsewhere, 3 had negative PCR elsewhere, 1 was unknown reason, 2 were under care of another hospital, 7 had died.
The use of HIV surveillance data to re-engage people living with HIV and lost to follow-up has been extensively documented; this public health intervention has been integrated in a national approach towards the elimination of HIV [7]. The use of such an approach in the elimination of other blood-borne viruses has yet to be extensively documented despite similarities in target demographics and a significant burden of disease worldwide.

Iceland has successfully implemented a nationwide HCV treatment programme, ‘TraP Hep C’ [8]. In this programme, a multi-faceted approach was used to identify those with chronic HCV infection and offer universal treatment with DAAs over a 36-month period. Similar to this study, patients in TraP Hep C were identified by cross referencing data from surveillance systems with laboratory data from Landskópshli University Hospital, the only University hospital in Iceland. The TraP Hep C programme has been reported as a successful use of surveillance data in re-engagement of those with chronic HCV infection with no exploration of the process itself. Our experience has demonstrated that re-engagement exercises using historical data have numerous pitfalls. Treatment data was not available from all ODN ‘spokes’ and PCR data was not available from all regional laboratories. Data linkage proved challenging and time consuming due to missing or incorrect patient identifiers and the large amount of ‘clean up’ needed.

Furthermore, the difference between Iceland and the UK lies in the scope of the problem. At the time of the study the Icelandic population was 340,000 with an estimated HCV viraemic population of 1110 (prevalence of 0.3%). The population of the West Midlands ODN alone was 340,000 with an estimated HCV viraemic population of 1100 (prevalence of 0.3%). This study, patients in TraP Hep C were identified by cross referencing data from surveillance systems with laboratory data from Landskópshli University Hospital, the only University hospital in Iceland. The TraP Hep C programme has been reported as a successful use of surveillance data in re-engagement of those with chronic HCV infection with no exploration of the process itself. Our experience has demonstrated that re-engagement exercises using historical data have numerous pitfalls. Treatment data was not available from all ODN ‘spokes’ and PCR data was not available from all regional laboratories. Data linkage proved challenging and time consuming due to missing or incorrect patient identifiers and the large amount of ‘clean up’ needed.

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