

Viral Hepatitis Prevention Board

The impact of COVID-19 on prevention of viral hepatitis and attainment of the elimination goals for viral hepatitis by 2030

Virtual meetings, 18 and 25 March 2021

This two-part virtual meeting aimed to look at the impact of the COVID-19 pandemic on the prevention of viral hepatitis through regional and national immunization programmes as well as harm-reduction services, and the possible impact of the pandemic on the achievement of the internationally agreed elimination goals for viral hepatitis for 2030.

IMPACT ON VIRAL HEPATITIS IMMUNIZATION PROGRAMMES WORLDWIDE

The irruption of COVID-19 in January 2020 left no corner of public health untouched. Globally and nationally health organizations of all kinds sprang into action. The World Health Organization (WHO) declared COVID-19 a public health emergency of international concern on 30 January 2020 and a global pandemic in March 2020. Later that month it issued guiding principles for immunization generally.¹ With UNICEF it warned of a general decline in vaccination rates;² the Institute for Health Metrics and Evaluation reported that coverage rates had dropped to levels last seen in the 1990s.³

According to UNICEF and WHO, globally vaccination has protected about 85% of all children against vaccine-preventable diseases. However, WHO and UNICEF estimated that at least 80 million children under 1 year were considered at risk of vaccine preventable diseases owing to the disruption of services. Indeed, five months into the COVID-19 pandemic, UNICEF and WHO had identified disruptions and suspensions of immunization services globally, in countries rich and poor but mainly those in WHO's African, Americas (Latin America) and the Eastern Mediterranean regions.⁴ The reasons given were principally low availability of personal protective equipment (PPE) and of healthcare workers due to allocation to COVID-services, and travel restrictions hindering access to services. The demand for immunization was diminished by users' concerns about the risk of exposure when travelling to vaccination centres and limited transport for those who wanted to be vaccinated.

Despite countries' attempts to maintain immunization programmes, most outreach activities had been suspended and, by 15 May 2020, 66 countries had postponed at least one vaccination programme because of COVID-19. These included polio campaigns in 38 countries and measles campaigns in 37 (even though outbreaks of measles were flaring up across the world in 2020). UNESCO reported that 91% of children had stopped attending educational facilities because of the pandemic, creating a risk of infections where immunization programmes were conducted in schools. Shortages of vaccination materials and staff have exacerbated the situation, as reported in Pakistan.⁵ The ongoing pandemic is a reminder of the importance of vaccination as a critical public health strategy for disease prevention and control.⁶

In the WHO European Region, where nearly 42 million cases of COVID-19 and about 900,000 related deaths had been recorded by mid-March 2021, immunization rates were worst affected in the early weeks of the pandemic, when lockdowns and restrictions on movement began. In early April 2020, six countries reported nationwide disruptions of routine immunization services, affecting 22% of the total infant population; rates only recovered generally by the summer of 2020. In March 2020, the WHO Regional Office for Europe warned that any disruption of immunization services, even for short periods, will result in an accumulation of susceptible individuals and a higher likelihood of outbreaks of vaccine-preventable diseases, which could result in deaths and an increased burden on health systems already strained by the response to COVID-19.⁷ Paradoxically, sharp declines in cases of

measles and rubella were seen in most countries after lockdowns⁸ but these may have been artefacts, a consequence of a drop in the quality of surveillance or simply due to a reduction in close contacts.

WHO's Regional Director for Europe has urged countries to maintain immunization service delivery and to drive demand for vaccination, with the aim of normalizing routine immunization services by the end of April 2021. WHO and UNICEF work to support countries' efforts to strengthen immunization programmes, and World Immunization Week (24–30 April 2021) offered an opportunity to enlist all sectors of society in restoring vaccination programmes and catching up on missed vaccinations. WHO has issued numerous guidance documents, including actions for decision-makers on managing health risks and is collecting examples of good practice and successful innovations.

In a joint assessment in the first half of 2020, UNAIDS, WHO and UNICEF assessed the disruption in HIV services in 16 countries in the WHO European Region due to COVID-19. Both the number of HIV tests performed and the number of people initiating treatment dropped by two thirds, although existing treatments were maintained. An online survey by EuroTEST (a consortium of bodies and experts in Europe drawing on experience with HIV/AIDS to coordinate integrated testing and earlier care) in October–November 2020 showed a significant decrease in testing for HIV, sexually transmitted infections and viral hepatitis in March–May 2020 compared with the previous year. Almost all the 98 respondents to a survey reported decreases in testing, many noting severe disruptions, in particular in community services for vulnerable populations.⁹ The main reasons adduced were fewer appointments scheduled and closure of sites during lockdown. Community sites were particularly affected by reduced numbers of staff and abandonment of drop-in services. Reallocation of staff to work on COVID-19 affected testing in secondary care clinics and at national levels. Linkage to care was challenged by delays in scheduling consultations, difficulties in contacting specialist care units or their temporary closure, lack of routine referrals, and patients not attending appointments. The most common mitigation measures were telemedicine, reduced frequency of follow-up visits and clinical monitoring tests, extending prescriptions to cover periods of several months, and home delivery. In the second half of 2020 a rebound was reported with several examples of rapid response and adaptation (including policies), innovation (especially remote counselling) and even mobilization of resources, despite limited scientific evidence.

In August 2020, WHO issued guidance on planning and implementing catch-up vaccination programmes.¹⁰ By February 2021, 26 countries had reinstated at least one vaccination campaign that had been postponed owing to COVID-19, but many programmes still remained affected. Recommended strategies included identifying suitable locations for delivering vaccines, integration with other health programmes, working with local and social media and community leaders, new locations for services, and changing hours of operation.

National responses

Italy

In Italy in April 2020, it became clear that vaccination coverage in particular of children, adolescents and adults had declined in many Italian Regions for similar reasons to those in other countries. The country's Board of the Vaccination Calendar for Life appealed to the health authorities to maintain and increase overall vaccine coverage at all ages during the COVID-19 pandemic.¹¹ Attempts were made to reorganize and innovate vaccination services (such as using sports facilities for vaccination). Urgent action was called for: (1) maintaining paediatric vaccination coverage; (2) reorganizing paediatric and adolescent vaccination (while respecting regional independence), including coadministration of more than two vaccines at the same session (unless expressly excluded in the

Summary of Product Characteristics) and ensuring an appointment system; (3) establishing catch-up programmes for vaccinations missed since the start of the pandemic, with no continuation of a discontinued course of vaccination; (4) urgently issuing tenders for the supply of influenza vaccines in suitable quantities; and (5) planning to increase vaccination coverage against influenza, pneumococcal diseases, diphtheria-tetanus-pertussis and herpes zoster. The Ministry of Health included among its priorities for catch-up vaccination the administration of the third dose of hexavalent vaccine for children. Subsequent activities from central government to local health unit levels have resulted in restoration of nearly all services, although gaps and areas of susceptibility remain.

Spain

By mid-March 2021, Spain had seen more than 3.1 million cases of COVID-19. As in other countries, the travel restrictions imposed after the arrival of COVID-19 confined many people to their homes and prevented people from attending health clinics. In April 2020 the Ministry of Health warned of the risks of delaying vaccination and followed that up in May with measures including the closure of schools. Nevertheless, vaccine coverage rates fell by anywhere from 5% to 60% and immunization programmes in schools were suspended. Only among pregnant women were high rates maintained. Many hospital resources and staff, including those in gastroenterology and hepatology departments, were diverted to COVID-19.¹² In most cities the activities of harm-reduction centres were severely reduced, with attendances cut and subjects lost to follow-up. Some resumption of activities was recorded in the second half of the year but not to pre-lockdown levels.

Within weeks of the arrival of COVID-19, 40% of hospital beds and 25% of care staff had been reassigned to COVID-19 patients (with regional variations). Some 90% of outpatient visits to gastroenterology and hepatology units had been replaced by remote consultations, in line with national and international guidelines. Microelimination programmes in Spain almost ceased and the decline in diagnoses has meant fewer treatments and consequently the greater likelihood of more infections.¹³

USA

In the USA, where a national emergency was declared on 13 March 2020, the impact of COVID-19 on routine immunizations for children was marked as elsewhere with falling vaccination rates in the weeks after the declaration of the COVID-19 emergency. CDC's Vaccine Tracking System (VTrckS) includes provider-ordering data from the Vaccines for Children Program, which is a national programme that provides federally purchased vaccines to about half of children 0-18 years of age. Orders for vaccines registered soon rebounded but not sufficiently to make up the substantial deficit by March 2021 compared with 2019;¹⁴ for childhood vaccination, the number of doses of hepatitis A vaccine were 19% lower and for hepatitis B vaccine 16% lower.¹⁵ Although the deficit in all routine vaccination is decreasing, much catch-up work is urgently needed from healthcare systems, healthcare provider organizations and state government agencies. Numerous possible barriers need to be overcome: inadequate communication with and outreach to parents; parents' fears about exposure and practical concerns about seeking care for their children; and reduced access to vaccination services. The Centers for Disease Control and Prevention (CDC) provide many resources for communicating with parents about routine vaccination during the COVID-19 pandemic.¹⁶

Measures to counter COVID-19 and ensure safe vaccination were introduced across the country in health centres, with telephone appointment systems, requirements introduced for punctuality, provision of clean rooms with social distancing, no access for accompanying persons, and the wearing of facial masks. Vaccination was prioritized for children aged younger than three years and especially

those under 15 months. Rescue or expedited vaccination schedules were used. Adolescents were actively recruited with active approaches (such as telephone and social media). Besides strengthened health centres, alternative and unusual locations were chosen for vaccination. Working hours were modified, more staff were employed, appointment systems were revamped, and home visits were made. Any contact with a clinic was taken as an opportunity for promoting routine immunization and for advocating other vaccinations (such as influenza).

The result has been that US coverage rates have climbed back since the nadir in May 2020. Despite that natural recovery, catch-up strategies had to be implemented and the restoring of the situation depended on committed vaccinators and vaccinees and the ability and willingness to innovate.

Impact on viral hepatitis services

Viral hepatitis has been no exception to the impact of COVID-19. Professional associations issued new advice on care of patients living with viral hepatitis, including people in prison.¹⁷ Studies were undertaken across the WHO European Region on the impact on prevention, testing, diagnosis and care for HIV, sexually transmitted infections and viral hepatitis.¹⁸ One study in the USA showed a significant reduction in testing for viral hepatitis, linkage to care, and outreach across all settings.¹⁹

A survey of providers and programme managers by the Coalition for Global Hepatitis Elimination in the second half of 2020 elicited 103 responses from people in 44 countries, including some in Europe.²⁰ COVID-19 had the greatest impact in March and April 2020 with most respondents reporting substantial decreases in screening and treatment for hepatitis B and C and similar declines in opioid substitution therapy in the Americas. The main barriers to resuming care were patients' fear and anxiety (especially in Europe) and loss of space and limited availability or loss of staff (in particular in the Americas). In Europe, mitigation strategies were predominantly: deferral of laboratory or clinical testing followed by an increased number of pills per prescription and, during the period of greatest impact, telemedicine; use of facial masks by healthcare workers and patients as well as rigorous cleaning; and mostly individual outreach (by telephone, text or home visits).

A survey by the World Hepatitis Alliance in spring 2020 documented the devastating and disproportionate impact of COVID-19 on viral hepatitis services provided by health systems in Europe for the most underserved populations such as prisoners, people who inject drugs (PWID) and the homeless. Information about COVID-19 for people living with viral hepatitis was generally inadequate, services were suspended or postponed, access to treatment was interrupted in some countries (completely in a few cases), diagnostic services were even more severely affected, and in particular reluctance to use services because of fear of exposure to SARS-CoV-2. Nevertheless, many civil society organizations evolved and rapidly adapted their practices and services, for example through telemedicine and outreach; decentralization was found to be an important way to overcome the main barrier to access to services, namely reluctance to use them. These organizations, whose contributions need to be recognized, also suffered financial blows, from which it will not be easy to recover. A further survey is planned for spring 2021.

Another survey by the World Hepatitis Alliance collected responses from civil society organizations in 32 countries across the world, confirming disruption of testing services, mainly due to closure of testing facilities; in addition, one third of the respondents reported difficulties in accessing treatment.²¹ In Spain, the number of patients being treated for hepatitis C fell, and microelimination programmes were badly affected.

Hepatitis B vaccination coverage rates are known to be liable to disruption through conflict and political crises, and COVID-19 has added to the stresses. COVID-19 has interrupted at least 75% of

health services in many countries, in particular low-income countries.²² In Italy during the first wave, 25% of hepatology wards were converted to other purposes, 23% of treatments for hepatitis B were postponed and in only 18% of patients with hepatocellular carcinoma was there continuity of care.²³ Specific figures for hepatitis B vaccination are hard to come by, but a report from the USA indicated a 63% reduction rate for hepatitis B vaccination in Alabama in 2020.²⁴ Lebanon experienced a decline between 2019 and 2020 in vaccination rates for hepatitis A of 57% and for hepatitis B of 49%.²⁵

Harm-reduction services

Many new cases of hepatitis B and C occur in PWID among whom rates of chronic infection are already high. Any impact in that group will be severe. Harm-reduction services are in the front line. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) conducted two studies in 2020 to assess the impact of COVID-19 on drug use and harm and to review the impact on markets, use, harm and services up until April 2021. These rapid observational assessments (“trendspotter” studies) revealed that some countries were able to provide data much more quickly than the habitual two-year reporting period.

COVID-19 was reported to cause especially increased mental health issues and violence-related harm seen in sentinel accident and emergency centres. Most national focal points reported decreases in drug treatment and harm-reduction services, the closure of or significant service reduction in drop-in centres and to a lesser extent needle and syringe exchanges, shelters, drug-consumption rooms and outreach services; in 40–60% of cases, drug treatment services were affected. Lockdowns reduced visits to services but larger quantities of equipment and materials were distributed; low-threshold centres were particularly severely affected. Access to clean syringes was reduced but eased through outreach and mobile services. Challenges included obtaining PPE for service providers, enabling access to other essential services, and developing or expanding digital services. All these initial repercussions on harm reduction had potential adverse effects on progress towards elimination of viral hepatitis.

Correlation – the European Harm Reduction Network, which has focal points in 35 countries, drew attention to cuts in opportunities for testing, social isolation, stigmatization and the need to monitor the long-term effects on HIV and hepatitis C care. Linkage to care was particularly challenging, with for instance delays in scheduling consultations, difficulty in making or lack of referrals, and closure of units. Several countries even imposed tight or tighter restrictions on provision of medicines for treatment of hepatitis C.

Some positive developments emerged from the pandemic, such as the application of digital technology, investments in cold chains, and innovations in service delivery (for example drive-through vaccination sites). A common theme to emerge from many studies was the degree of innovation, flexibility and adaptability - not only in harm-reduction services - even as soon as April 2020, and the resulting maintenance of many essential services. WHO’s Regional Office for Europe has been creating a compendium of best practices in the response of these services to COVID-19.

For harm reduction, examples included self-service provision of material by clients, mobile drug consumption services, electronic prescription and home delivery, and introduction of low-threshold services. In some cases, the regulations governing opioid substitution therapy were changed, for instance including delivery by outreach programmes. Although some shelters were closed, new ones have been opened. Some services have been combined and expanded. Remote counselling appointments have been introduced at community and secondary care levels.

Rapid and flexible responses were shown by many organizations and services focused on PWID. Examples from throughout Europe cited by Correlation (the European Harm Reduction Network),

included lengthening the period covered by prescriptions and broadening the range of services for opioid substitution therapy, telemedicine and home delivery. The Network confirmed numerous political developments such as the changing of laws, provision of opioid substitution therapy and housing. Diagnosis remained available and results suggest that treatment and care can be provided in the community (including harm-reduction service centres and prisons). Integration of testing and treatment at the same location occurs only too rarely even though more than a dozen best practices in different countries (such as *Suchthilfe Wien* in Austria) demonstrate its feasibility.

In response the European Monitoring Centre (EMCDDA) has issued more than a dozen publications on the impact of COVID-19 on harm-reduction services in Europe²⁶ and is producing guidance on prevention and control of infectious diseases in PWID and a manual on testing for viral hepatitis in drug services. It is also monitoring hepatitis C in European countries.

Not only is it COVID-19 that is bringing new risks, but also the observed increase in stimulant use and greater risks of outbreaks of infectious diseases especially HIV and hepatitis C, set against which is the change from night life to home life and the move of outreach services to beyond the streets. For HCV-related disease in PWID, a radical change is needed in many European countries, with national guidelines, guaranteed access to direct-acting antiviral agents, improvements in the continuum of care, elaboration and expansion of one-stop testing and treatment services, and community-led testing and access to treatment.

STRENGTHENING VIRAL HEPATITIS AND OTHER VACCINATION PROGRAMMES

Recovery and rebuilding of immunization services depend on prevention and control measures and innovations (as well as costs). Different countries have responded with guidance on vaccines and immunization practices. For instance, in the USA the CDC has issued an urgent call to action on the pressing need for catch-up vaccination, with resources for parents and immunization partners. The Indian Academy of Pediatrics issued recommendations for the schedules for hepatitis B vaccination during the COVID-19 epidemic in the country.²⁷ Variable levels of catch-up vaccination have been seen across countries.

The impact of COVID-19 on immunization and harm-reduction services was incontrovertible, but less convincing was the evidence of a detrimental effect on hepatitis B vaccination programmes. Progress towards the interim targets for elimination and eradication should be monitored closely.

The sense of the meetings was that WHO and health ministries were the organs that should be responsible for the response and strengthening viral hepatitis programmes, with the European Centre for Disease Control and Prevention (ECDC), the European Commission, and civil society less involved. WHO was already active, issuing guidance, collating good practices and could support civil society, whose role could be difficult at the best of times. EMCDDA was publishing supporting information for policy-makers. Correlation – the European Harm Reduction Network is collating and publishing information such as examples of the positive responses of governments.

Participants underlined the need to document all experiences and to evaluate the various interventions and innovations that had been used. Many data were not yet available, such as those for the second and later waves as well as whether there had been any impact on the administration of the routine birth dose of hepatitis B vaccine and whether the number of women going to a hospital to give birth had been affected. COVID-19 was suspected of having an effect on vaccination rates at birth and of children, but the disparities seen for instance in the USA were being driven more by poverty than by race or ethnicity.

Concerns surrounded the lack of trust in various communities about not only COVID-19 vaccines but vaccines in general. Growing vaccine hesitancy was being accompanied by a politicization of immunization, in Europe and elsewhere in the world. Yet COVID-19 had created a thirst for information about immunology, vaccines, clinical trials and side effects; the time was ripe for the provision of more, accurate, consistent and reliable information about vaccines generally. Not just the public should be targeted to increase health literacy, but health ministries should be persuaded of the opportunities and benefits of giving sufficient attention to vaccination and viral hepatitis in general.

THE IMPACT OF COVID-19 ON THE WHO ELIMINATION GOALS

The Sustainable Development Goals envisage a global reduction by 2030 of 90% in new infections with hepatitis B and C viruses (to 900,000) and of 65% in deaths due to viral hepatitis (to less than 500,000). Elimination of hepatitis B and C would be a cost-saving or cost-effective investment, averting 26.8 million deaths, including 4.5 million before 2030.²⁸ WHO's Global health sector strategy on viral hepatitis 2016-2021 set the path from 2015 via targets of 30% and 10% reductions by 2020. WHO's goals to eliminate hepatitis B and C by 2030 were ambitious, even before the advent of COVID-19 and currently too few people globally are being diagnosed and treated.²⁹

The Seventy-fourth World Health Assembly in May 2021 is expected to confirm the objective and to request the development, through a consultative process, of a new global health sector strategy for 2022-2030 that will maintain core interventions for different populations and update targets and propose innovative approaches.^a The European regional plan will also be updated, with investment cases, proposals for piloting a process to validate elimination and updating of guidance. In general plans should use absolute targets rather than rates.

Since 2015, much progress has been made. By 2020, most countries in the WHO European Region had national plans on hepatitis. Although funding and implementation of those plans remained variable, at least 230,000 people with hepatitis C were being treated a year with direct-acting antiviral agents (with generics for the latter available in 11 countries in the Region, and the lowest reported price being US\$ 89 for a three-month course of treatment). The management of patients' needs to be simplified, with the European Association for the Study of the Liver (EASL) no longer recommending measurement of viral load and follow-up of sustained viral response after treatment at 12 weeks.³⁰ WHO and other bodies have issued guidelines on practically every aspect, including antiviral treatment of pregnant women to prevent vertical transmission of HCV. WHO has issued operational guidance on maintaining essential health services and is compiling a compendium of good practices in the response to viral hepatitis.³¹

In the WHO European Region, most countries have already reached rates of >90% coverage for infant vaccination with three doses of hepatitis B vaccine.³² Nevertheless, the Region as a whole may have achieved the 2020 interim goal towards eliminating maternal-to-child transmission of hepatitis B virus (prevalence of HBsAg of <1% in under five-year-olds). Extrapolated globally, the progress translates into 22 million deaths averted by 2020 with the potential of 16 million more by 2030. A better measure of progress would be age-standardized mortality rates rather than simple counts of deaths, an

^a The Health Assembly in decision WHA74(20) (2021) subsequently decided to confirm the objectives of the global health sector strategy on viral hepatitis and to request a broad consultative process to develop global health sector strategy on viral hepatitis for the period 2022–2030 based on qualitative and quantitative scientific evidence for the achievement of commitments for viral hepatitis, including Sustainable Development Goal target 3.3 and other related goals and targets.

approach that WHO is stressing in its draft plans for validating elimination of hepatitis B and C. Globally, however, much remains to be done to increase the rates of people with hepatitis B and hepatitis C being diagnosed and treated.

In Spain, by August 2020, after the first wave of COVID-19 and subsequent lockdown, the HCV elimination programme, begun in 2015, had successfully treated nearly 150,000 patients, putting the country on course for meeting the WHO goal before 2030, along with Iceland, France, Italy, Switzerland and the United Kingdom. The Spanish Alliance for Viral hepatitis Elimination recently issued a position statement calling for countries to capitalize on the introduction of vaccination against COVID-19 to screen for HCV infections. Specifically, it recommended: revitalization of HCV management, including diagnosis, referrals and treatment initiation; immediate restarts of HCV microelimination programmes, particularly those devoted to marginalized populations. Its recommendation to offer hepatitis B and C screening to anyone undergoing any serological diagnosis for SARS-CoV-2 infection has not been taken up.³³

The following changes introduced because of COVID-19 were seen to offer the greatest potential benefit to prevention, care and treatment of viral hepatitis: increased laboratory testing platforms and the build-up in laboratory infrastructure; improved training; better referral networks; better surveillance; and contact tracing. A dramatic move came in August 2020 with the call to action by the European Association for the Study of the Liver to ensure attainment of the 2030 goals to eliminate viral hepatitis: the Association recommended that all barriers to the uptake of healthcare services by PWID be removed by changing policies and discrimination that hinder access, including the decriminalization of minor, non-violent drug offences and the adoption of an approach based on promotion of public health, respect for human rights and evidence.^b

COVID-19 has altered the transmission dynamics of hepatitis B in several ways. Reduced access to antiviral treatment increases the risk of transmission. Disrupted antenatal care may increase vertical transmission and an increase in home births not attended by birth attendants may decrease administration of a birth dose of vaccine. Impaired harm-reduction services increase the risk of transmission among PWID. Lockdowns may lead to an increase in risk behaviours such as unprotected sex and misuse of alcohol. Missed diagnoses prevent entry into care: in sub-Saharan Africa the number of new patients seen in viral hepatitis clinics declined by up to 95% in the United Republic of Tanzania.³⁴ Generally, access to treatment has been reduced because of patients' fear of exposure at health facilities and restrictions on movement and factors in the health system such as redeployment of staff, closure of facilities, supply chain disruptions and in some cases the impracticality of telemedicine. Health inequalities play a crucial role too.

Before the pandemic eight countries in the world were on track to reach the WHO goal of eliminating HCV by 2030, including France, Georgia, Iceland and Spain. COVID-19 has resulted in the slowing or stopping of many viral hepatitis elimination programmes, and the prevalence of HCV may increase as soon as treatment or harm-reduction programmes slow down.³⁵

The impacts are likely to continue with subsequent waves of disease. Mathematical modelling work has been focusing on the impact of COVID-19 on progress towards elimination, in particular the effect

^b The signatories of a Call to Action for a Europe free of hepatitis C launched at the 3rd European Union HCV Virtual Policy Summit (Brussels, 24 March 2021) likewise committed themselves to “the decriminalisation of minor, non-violent drug offences and [called] for political support for harm reduction services in all European countries” (see https://hcvbrusselssummit.eu/images/summits/summit2021/HepBCPPA_Final_Call_to_Action_24_March.pdf, accessed 7 April 2021)

of a lack of diagnosis and treatment of hepatitis C and delays in treatment; the impact on harm-reduction programmes was not taken into account.³⁶ Preliminary data suggest that treatment for HCV dropped by 50% in the European Region in 2020 and data from Italy indicate a 57% reduction; the pandemic is not over and reduced levels of treatment are likely to continue. A simulation of the clinical and economic impact in Spain of an 18-month delay in HCV diagnosis and treatment indicated that by 2030 the number of liver-related deaths, hepatocellular carcinoma and HCV-related decompensated cirrhosis would increase substantially;³⁷ the associated economic costs over the 10-year period would amount to at least €9 million. Broader modelling of the consequences for hepatitis C in the European Region indicated that the greatest impact of disruptions would come from interruption of testing and treatment: a one-year delay in 2020–2021 would result in 8700 excess deaths from hepatocellular carcinoma and 13,800 excess liver-related deaths by 2030 as well as some 16,000 more incident HCV infections (which would likely result in excess deaths beyond the target date of 2030).³⁸ The human and economic impact in terms of advanced liver disease and deaths would only be seen after several years. Because of the course of the epidemic, the opportunity to link screening for HCV with that for SARS-CoV-2³⁹ has probably been lost.

What happens next will depend on the priority given to viral hepatitis and the elimination goals.

CONCLUSIONS AND RECOMMENDATIONS

Routine vaccination remains the main intervention against vaccine-preventable diseases in children, and such vaccinations are essential for pregnant women, adults, elderly people and people with chronic conditions or at high risk. COVID-19 has disrupted these programmes across the world, but in many countries immunization and preventive services have responded with resilience and innovation. For viral hepatitis, COVID-19 and the ensuing disruptions have likewise significantly impacted services and the spectrum of care. The consequences of COVID-19 at the political level (from delays in developing joint strategies to investment in public health infrastructure and planning for the next zoonotic epidemics) are only beginning to be seen.

Health systems generally are under strain in most countries. COVID-19 testing and vaccination programmes are under way. Although integrating programmes for other diseases could be useful, introducing screening of hepatitis B and C might be too optimistic or even too late.

Progress towards the elimination goals

The goals and targets for elimination of hepatitis B and C by 2030 were set to engage partners, to make for accountability and to change systems and policies. Progress so far has been impressive – for example the cost of direct-acting antiviral agents has dropped dramatically and the global target of reducing the estimated prevalence of hepatitis B below 1% among 5 year old children was the only Sustainable Development Goal to be achieved in 2020. Good progress towards other targets depends on good epidemiology but is not possible in countries that lack a strong public health infrastructure. The Coalition for Global Hepatitis Elimination aims to build a community of practice to create an evidence base for the elimination of viral hepatitis with data dashboards for 191 countries.⁴⁰ The problem is that we were not on track to meet the goals and targets, even before the COVID-19 pandemic hit.

COVID-19 will have an impact on achieving the elimination goals, especially as the pandemic was continuing, long-term consequences were becoming more evident, and most impacts were yet to be seen. Whether elimination would be feasible for all viral hepatitis by 2030 was less certain, although

the likelihood was greatest for hepatitis C. Responsibility for ensuring that the goals were attained lay with health ministries and WHO (regional offices and headquarters) as the main agents, followed by non-State actors including patients' organizations.

Whether the specific targets at the present levels will be met, the consensus was probably not, but the targets are needed and should be clear (in terms of absolute or relative numbers). European Member States will be able to control infections and reach targets (for instance by screening and treating immigrants), in other words doing what is feasible. A target may be ambitious and challenging but should not be unreasonable. It is better to be realistic, as for example with the mortality targets: the goals facing some countries were unattainable. More consideration needs to be given to the issue of absolute numbers or relative targets and to allowing flexibility for regions and/or countries, so that Member States should be able to choose targets that are in line with their monitoring systems.

At this stage of the COVID-19 pandemic, it is estimated that a delay of a year in the progress towards the agreed elimination goals for 2030 could mean an extra 30,000 deaths in Europe by that time.

Impacts

Globally the highest return will be investment in increasing the birth dose of hepatitis B vaccine, in particular in Africa. To date there are no data on impact of COVID on home births or antenatal care. In the long-term the investment through COVID-19 in laboratories and staff will also bring a big dividend for vaccination services, including those for viral hepatitis. Already COVID-19 has caused governments to change some of their policies such as those regarding treatment of hepatitis C and allowing results of testing to be given to patients, and more may follow as examples of good practices are compiled and disseminated.

Needs and opportunities

- Mobilization

All players in medical field should participate in increasing and maintaining momentum. The benefits of the long-time effort put into developing programmes of work are now being reaped, with enormous strides having been taken over the past five years. Now studies like those on COVID-19 seroprevalence offer an opportunity to piggy-back them, although sadly there is little evidence of that being seized for viral hepatitis. Coordination and a strategy for mobilization of services are needed.

- Strengthen public health

The need to strengthen the public health infrastructure continues. Active support is being provided by WHO, the European Centre for Disease Control and other entities in Europe. Public health interventions, including harm-reduction services, need support and investment. One lesson learnt was that harm-reduction services form an essential part of the health system and need to be recognized as such. Access to such services is inadequate and needs to be restored and broadened post-COVID-19. Key areas identified are the development of strong local networks and digitization, the importance of frontline services and outreach, the opportunities for new arenas for interventions, but also the major consequences for mental health of both staff and clients.

Challenges still include access and availability but have been exacerbated by staff shortages, the complexity of clients' needs, reallocation of specialists, some client drop out (noted as a down side of telemedicine), and the introduction of COVID-19 vaccination.

Catch-up vaccination campaigns should be run according to local epidemiology (to prevent diversion of funds from vital programmes).

- Changing policies and perceptions

Attaining the goals will need change (for example, removal of restrictions on access to treatment, omitting follow-up liver biopsies, and provision of greater support for harm reduction). The means to change government policies and to create and support political will at the highest levels still need further investigation and effort.

Continued work is necessary on how to change the perception of governments about viral hepatitis and its burden. Governments that are not meeting their commitments to meet targets and goals set in World Health Assembly resolutions and the Sustainable Development Goals need to be pressured; already the European Centre for Disease Control is working to keep European Member States to account. Goals for viral hepatitis interventions must be incorporated into national policies and strategies.

Service provision should be improved, for instance through better use of telemedicine, electronic records and safe facilities.

- Data

The European Centre for Disease Control continues to support Member States in obtaining the best, most robust data in which governments can be confident, including data on gaps in the provision of health services in particular for high-risk groups. Data are also needed to quantify the impact of COVID-19 on viral hepatitis elimination programmes and to ensure that policy-makers are aware of both the consequences and the fact that large-scale programmes for screening and treatment of HCV are feasible, even in countries with large populations of PWID.

- Research

Research needs include: patterns of disruption; impact on routine immunization services; resilience (build back better); determinants of recovery; introduction of COVID-19 vaccines; ways to counter vaccine hesitancy; and scalability and feasibility of innovations. Other issues relate to the global fall in cases of measles to very low levels in all regions as COVID-19 spread across the world in 2020 and to the lower number of cases of acute flaccid paralysis than in 2019; were those real declines or did they reflect weaker surveillance? Many such research areas need investigation and appropriate funding.

- Education and communication

The pandemic has brought its benefits as well, in the form of community and individual education and better knowledge about immunity, clinical trials (including those for children and pregnant women), vaccines, and new vaccination strategies, with the possibility of a messenger RNA for new viral hepatitis vaccines. Nevertheless, continued efforts are needed to raise and maintain public awareness and knowledge (health literacy) through public health messaging. Advocacy must be increased.

- Leverage

Opportunities to leverage COVID-19 activities wherever possible need to be seized. Attendance for a COVID-19 PCR test could provide an opportunity for discussing vaccination against hepatitis B and other infectious diseases. Other examples include hybrid surveys for SARS-CoV-2 infection and viral hepatitis infections and the European Commission's plan for cancer (especially given the shocking data on hepatocellular cancer due to viral hepatitis). Immunization of the elderly against COVID-19 also

provides an opportunity for promoting immunization against other diseases such as pneumococcal disease and influenza.

Opportunities exist for both hepatitis A and hepatitis B vaccination programmes through the promotion of COVID-19 vaccination; even though hepatitis B vaccination programmes focused on children, vaccination of adults through catch-up campaigns could include hepatitis B. If COVID-19 vaccination becomes a requirement for travelling, then information about the benefits of hepatitis A vaccination could also be promulgated.

- Global considerations

Those countries with the heaviest burdens of liver disease need to be the focus of attention. Universal health coverage is a powerful means of addressing viral hepatitis, possibly through health insurance schemes. Programmes need to include equity as an important element.

A general recommendation was to highlight the importance of educating students at school and university about the need for vaccination and reaching them with suitable programmes. Also, consideration needs to be given to the situation in low- and middle-income countries, reaching refugees and migrants, and, once vaccines are broadly introduced, equity in distribution and the role of vaccine passports.

Any change towards realistic and achievable targets needs to be conveyed in clear and understandable language for the public and patients. Equally, approaches to potential donors need positive ideas based on common ground, shared views and consistent and coordinated messages. What is being done needs to be highlighted and achievements praised; the Immunization Agenda 2030 and WHO's World Immunization Weeks offer vehicles for such work. Much work remains to be done to counter the activities of those opposed to vaccines and vaccination; pre-emptive, clear and consistent information must be provided and distributed widely.

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