National Monitoring and Evaluation Plan for Viral Hepatitis Myanmar

2017-2020

National Hepatitis Control Program
Department of Public Health
Ministry of Health and Sports
Myanmar

September 2017

National Monitoring and Evaluation Plan for Viral Hepatitis Myanmar

2017-2020

TABLE OF CONTENTS

PREFACE

Strategic Information Plan is one of the core responsibilities of National Hepatitis Control Program to help ensure quality of the program implementations. National Hepatitis Control Program (NHCP) was newly established in 2015. The Strategic Information Plan will support program implementation in accordance with National Strategic Plan and will also assist in the systematic development of logical framework for "Strategic Information" which was adopted as one of the strategic directions under National Strategic Plan. Our intention in writing the Strategic Information Plan is to provide concise guidance to implementers working on the hepatitis projects to develop a comprehensive M&E system. The M&E Plan will also ensure standardization and harmonization of data collection and recording and reporting nationally and across all stakeholders and implementing partners following the logical framework on the strategic information of hepatitis program. This is organized with the data flow, sets of indicators and tools that did not appear to be available in existing publications.

National Hepatitis Control Program
Ministry of Health and Sports
Nay Pyi Taw

ACKNOWLEDGEMENT

The National Hepatitis Control Program would like to acknowledge the considerable contribution by teams composed of Department of Medical Services, Department of Human Resource Development, Department of Medical Research, National Blood Center, National AIDS Program, National Drug Abuse Control Program, World Health Organization, Clinton Health Access Initiative, 3MDG UNOPS, Medecins Sans Frontiers Holland and Burnet Institute.

INTRODUCTION

Strategic Information Plan for Viral Hepatitis Program in Myanmar

In response to the resolution of the World Health Assembly in May 2016 endorsing the Global Health Sector Strategy (GHSS) on Viral Hepatitis 2016-2020, Myanmar is preparing a National Operational Plan for Viral Hepatitis. This plan envisages strategic actions in the areas of prevention, control, treatment and care of viral hepatitis, with the overall objective of meeting the GHSS goal of reducing new infections and mortality due to viral hepatitis in the country so that this disease is no longer remains a major public health threat in the country by the year 2030.

All public health programs need strategic information throughout all stages, namely (i) preparation and initial assessment, (ii) planning, (iii) implementation, and (iv) evaluation. It is thus important to decide on the information needs and the methods to be used to collect and collate this information at an early stage in the program cycle.

National Hepatitis Control Program aims to increase accessibility of service delivery points and to reduce the disease burden of hepatitis. Since the national program is modeling the program in an integrated program approach, the policy making, coordination and advocacy are main priority top list of the program action. The main goal of the program is to reduce the incidence and prevalence of the hepatitis infection.

This document discusses the principles underlying collection of strategic information for the proposed national hepatitis action plan of Myanmar and proposes a draft plan for this purpose. This document is based on the following:

WHO Technical Report titled 'Monitoring and Evaluation for Viral Hepatitis B and C: Recommended Indicators and Framework' (available from http://www.who.int/hiv/topics/hepatitis/en)

a. A consultation on Operational Plan for Viral Hepatitis, organized by the Ministry of Health and Sports, Government of Myanmar, in Yangon on October 14, 2016, which was attended by several stakeholders and where the issue of strategic information for viral hepatitis program was discussed in detail.

Since a large majority of the burden of disease from viral hepatitis relates to two viruses that frequently cause chronic infection, namely hepatitis B virus (HBV) and hepatitis C virus (HCV), this document deals primarily with these infections.

Principles of strategic information for national viral hepatitis control program

The information needs vary during each phase of a national viral hepatitis program **(Figures 1).** At the beginning, it is to be expected that the data sources will be limited. However, as the program matures, newer data sources are likely to become available and information gathered during program implementation can be used to guide further efforts. Also, the quality of data is expected to improve over time.

A. *Initial assessment phase*

During the initial assessment, the following types of information are needed:

a. Estimates of the prevalence of infection with HBV and HCV in the general population, and/or selected high-burden groups.

b. Initial coverage estimates for key prevention interventions, e.g. routine immunization against hepatitis B, prevention of mother-to-child transmission of hepatitis B (timely birth dose of hepatitis B vaccine), provision of safe blood transfusion, injection safety and use of harm reduction interventions among key populations.

The need for sentinel surveillance

It is important to set up a sentinel surveillance system for acute viral hepatitis to monitor the incidence of acute illness, to be aware of outbreaks and to mount appropriate and timely response.

In addition, at this stage, it is useful to initiate steps to improve surveillance for acute hepatitis, which is related to new infections (and hence is a marker of *incidence* of infection), and to improve data on deaths from sequelae of viral hepatitis, namely hepatocellular carcinoma (*mortality* due to diseases caused by viral hepatitis). These two measures (*incidence* of infection and *mortality* due to viral hepatitis) carry particular importance since these are used to define *elimination* of viral hepatitis as a public health threat.

B. *Planning phase*

During this phase, the data collected during the initial assessment is used to estimate the overall burden of disease. In addition, one can simulate the effect of various combinations of interventions for prevention and treatment, often using mathematical

techniques of varying complexity, to estimate their cost, impact, cost-effectiveness and return on investment. This information is in turn useful for making an *investment case*.

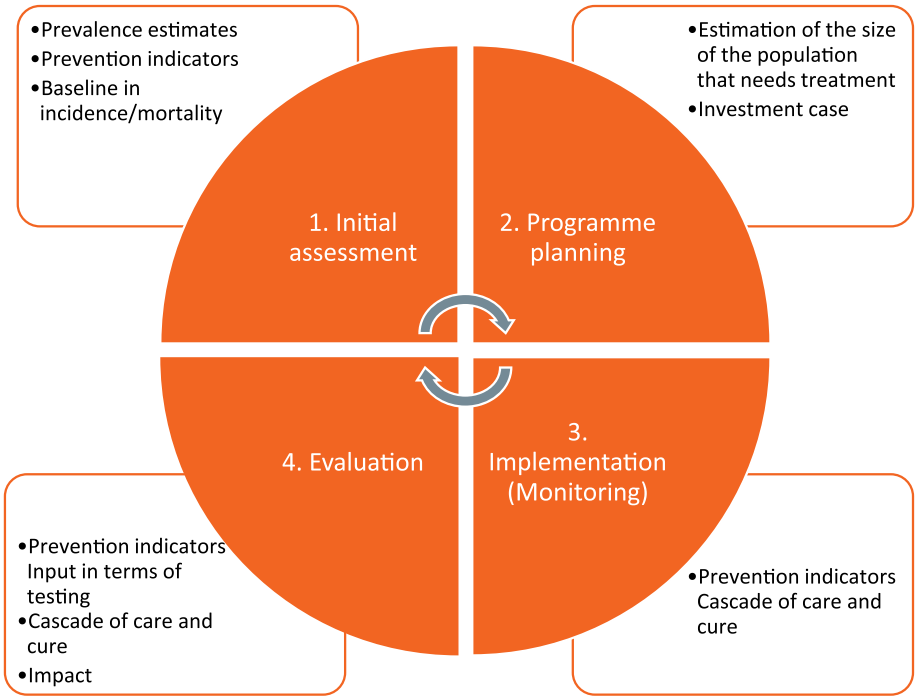
C. *Implementation phase*

During the implementation, two types of information are needed.

a. Assessment of progress in preventive interventions: This is done by periodically obtaining information on coverage estimates for key prevention interventions, e.g. routine immunization against hepatitis B, prevention of mother-to-child transmission of hepatitis B (timely birth dose of hepatitis B vaccine), provision of safe blood transfusion, injection safety and use of harm reduction interventions among key populations.

b. Assessment of progress with cascade of diagnosis, treatment initiation and treatment outcome: This can be done by creating and maintaining a registry of persons infected with HBV or HCV. This register would include the pretreatment assessment, treatment record and treatment outcome.

Figure 1 : Uses of strategic information at all stages of a national viral hepatitis program



GENERAL GUIDANCE PRINCIPLES

Strategic Information Plan for Myanmar is an essential document for a country, as it describes how the M&E system should be run. It should be accompanied by an annual costed work plan describing the planned M&E activities for each year including the strengthening measures to improve the M&E system identified through M&E system or data quality assessments. It provides the background information for the indicators included in the Performance Framework and the reports generated from the M&E system will be of beneficial value to the National Program and also as advocacy data to potential donors.

The M&E system should ensure that data is collected, processed and transformed into strategic information (SI), to allow for informed decision-making at all levels: local, country and global.

This M&E plan identifies both global and national indicators and the M&E activities to be carried out to allow for strategic and systematic decision making within the NHCP.

1. Indicators, definitions and measurement

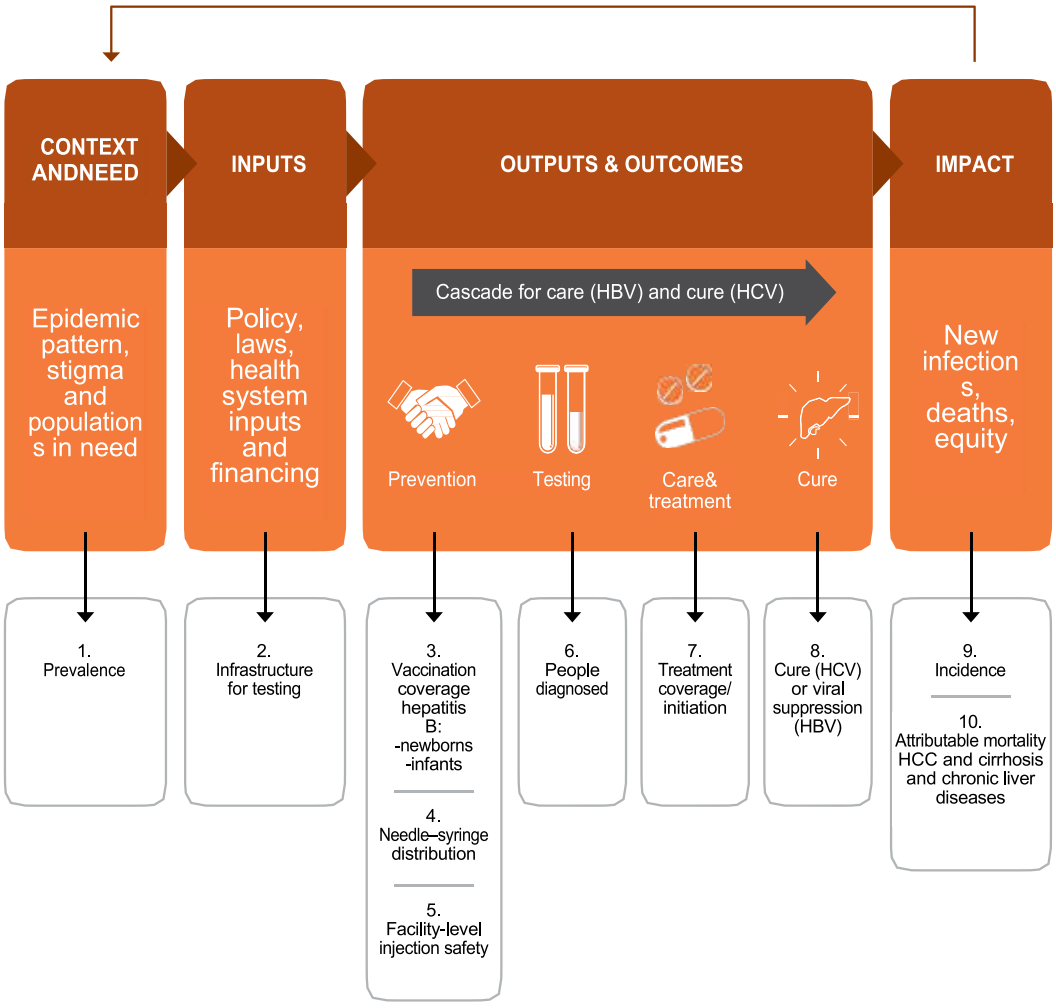
For strategic planning and effective implementation, the M&E data is collected based on a series of indicators. The (10) global indicators are identified by WHO and additional national indicators were adopted during Technical Working Group (TWG) core group meetings. The available baseline data was collected as during the development of National Strategic Plan for Hepatitis.

The (10) global indicators are listed below and are collected in the cascade manner. The national indicators are set according to the corresponding activities will be collected from the respective agencies. Some indicators will be measured through surveys and studies.

Program performance is to be measured again predetermined national targets, which were developed by the NHCP in collaboration with in-country stakeholders. Program performance should be reported and explained annually in the required reporting format. Any significant deviation reflecting an over-achievement or an underachievement should be mentioned in the narrative format.

Figure 2 below illustrates the linkages between the M&E plan, the M&E system and the use of information at different levels according to the WHO M&E plan 2016.

Figure 2. Strategic Information framework: minimum set of 10 core indicators to monitor and evaluate the health sector response to hepatitis B and C along the result chain



The data obtained in the previous stage are collated to generate estimates for 10 'core' indicators on viral hepatitis **(Table 1)**. These indicators include estimates of *incidence* of infection and of *mortality* due to HBV and HCV.

Table 1. Types of indicators collected in the National Hepatitis Control Program

De-scrip-tion	M&E Domain	Category	Indicator
Impact/ Coverage Indicator	Survey		1. Prevalence of chronic HBV infection
	Survey		2. Prevalence of chronic HCV infection
	Survey		3. Cumulated incidence of HBV infection in children 5 years of age
	Survey		4. Incidence of HCV infection
	Survey		5. Deaths from hepatocellular carcinoma (HCC), cirrhosis and liver diseases attributable to HBV and HCV infection
Outcome Indicator	Survey		6. Coverage of timely hepatitis B vaccine birth dose (within 24 hours) and other interventions to prevent mother-to-child transmission of HBV
	Survey		7. Coverage of third dose of hepatitis B vaccine among infants
	Program data	National	8. Coverage of third-dose HBV vaccine among high risk individuals
	Program data	National	9. Coverage of third-dose HBV vaccine among health care workers
	Injection safety		10. Facility level injection safety

De-scrip-tion	M&E Domain	Category	Indicator
Outcome Indicator	Treatment program data		11. Treatment coverage for hepatitis B
			12. Treatment initiation for hepatitis C
			13. Viral suppression for chronic hepatitis B patients treated
			14. Cure for chronic hepatitis C patients treated
	Occupational hazard	National	15. Needle-stick injuries among healthcare workers
	Blood screening	National	16. Blood screening coverage
	Program data		17. Needle-syringe distribution
	Program data	National	18. IEC distribution
	Program data		19. Infrastructure for HBV and HCV testing
Input indicators	Program data		20. People living with HCV and/or HBV diagnosed

Table 2: Metadata for the 20 core indicators

Indicator 1	**Prevalence of chronic HBV infection**
Indicator category	Global Core
M&E domain	Context and needs
Health domain (sub-domain)	Morbidity (Prevalence)
Definition	Number and proportion of people living with chronic HBV infection (*HBsAg positive)*
Numerator	Number of persons with chronic HBV defined by HBsAg-positive serological status
Denominator	Number of persons (total population)
Disaggregation	Sex/gender, age groups , pregnancy status, high risk/burden populations for viral hepatitis B If possible: - co-infected with HIV- co-infected with HCV
Measurement method, sources of data	Information from this indicator is derived ideally from surveys, but can be derived from program data, special studies and modelling.

Program relevance and interpretation	This indicator reflects epidemic and service needs, as it serves as numerator or denominator for several other indicators along the results chain and cascade (coverage and impact indicators). The bio-marker of HBV infection is HBsAg. Given the low incidence of HBV infection, any person HBsAg positive during a cross sectional survey is most likely to have chronic HBV infection (the probability to come across a recent infection is low). For this indicator, data from Myanmar is available from a general population survey conducted in 2015. In addition, data in special groups are available from a recent Integrated Bio-Behavioural Surveillance (IBBS) survey and HSS survey. In addition, it may be possible to obtain data on this indicator in the future from periodic surveys in special groups (people who inject drugs [PWID], men who have sex with men [MSM], people in prisons and other closed settings, female sex workers [FSW] and transgender people). For general population prevalence, a good estimate may be possible from data available from other cohorts, e.g. pre-employment testing, screening of ante-natal (pregnant) women, and screening in patients undergoing routine surgery, etc., or through general population surveys. This indicator is unlikely to change quickly following the introduction of interventions to prevent HBV and HCV infection. Hence, it is not a good indicator for assessing the impact or outcome of the control program in the short-term.

Indicator 2	**Prevalence of chronic HCV infection**
Indicator category	Global Core
M&E domain	Context and needs
Health domain (sub-domain)	Morbidity (Prevalence)
Definition	Number and proportion of people living with chronic HCV infection *(HCV RNA positive or HCV antigen [Ag] positive*)
Numerator	Number of persons with chronic HCV infection defined as positive for HCV RNA or positive for HCV Ag
Denominator	Number of persons (total population)
Disaggregation	Sex, age, pregnancy status, high risk/burden populations for viral hepatitis C
Measurement method, sources of data	Information from this indicator is derived ideally from surveys, but can be derived from program data, special studies and modelling Modelling may be used initially, if data are only available for anti-HCV.

Program relevance and interpretation	This indicator reflects epidemic and service needs, as it serves as numerator or denominator for several other indicators along the results chain and cascade (coverage and impact indicators). Presence of anti-HCV antibodies provides information on exposure to HCV without distinction between either past/ resolved or present/active infection. Recommended bio-markers of chronic HCV infection include HCV RNA and HCV core antigen (HCV Ag). For this indicator, data from Myanmar is available from a general population survey conducted in 2015. In addition, data on special groups are available from a recent Integrated Bio-Behavioural Surveillance (IBBS) survey. In addition, it may be possible to obtain data on this indicator in the future from periodic surveys in special groups (people who inject drugs [PWID], men who have sex with men [MSM], people in prisons and other closed settings, female sex workers [FSW] and transgender people). For general population prevalence, a good estimate may be possible from data available from other cohorts, e.g. pre-employment testing, screening of ante-natal (pregnant) women, and screening in patients undergoing routine surgery, etc., or through general population surveys. This indicator is unlikely to change quickly following the introduction of interventions to prevent HBV and HCV infection. Hence, it is not a good indicator for assessing the impact or outcome of the control program in the short-term.

Indicator 3	**Cumulated incidence of HBV infection in children 5 years age or older**
Indicator category	Global Core
M&E domain	Impact
Health domain (sub-domain)	Morbidity (incidence)
Definition	Proportion of children 5 year of age or older with serological evidence of HBV exposure (*anti-HBc positive*) and / or chronic infection*(HBs Ag positive)*
Numerator	Number of survey children 5 years of age or older living with biomarkers of exposure and/or chronic infection
Denominator	Number of children aged 5 years of age or older in surveys
Disaggregation	Sex, place of residence, exposure to hepatitis B birth dose (HepB_BD) , exposure to hepatitis B 3rd dose (HepB3)
Measurement method, sources of data	HBsAg biomarker prevalence survey in children 5 years of age or older (immunization coverage surveys and administrative vaccination coverage data from EPI)
Program relevance and interpretation	Incidence data from children are most important. Infections acquired in the five first years of life lead to chronicity in 20-30% of cases and account for the majority of the burden of chronic infections in adults. Children under the age of five have not yet gone through the risk period during which infections are most likely to result in chronicity. Anti-HBc reflects the cumulated risk of infection over five years. This estimate is most useful from an epidemiological perspective. HBsAg estimates the proportion of children with chronic infection who are likely to develop chronic hepatitis and subsequent sequelae. This estimate is most useful from a public health perspective. Trends in incidence of HBV infection in adults/ general population are reflected through surveillance of acute hepatitis B. However incidence in adults/ general population is less informative, as infections at this age/ in this population results in less chronicity than infections in children (reference: WHO viral hepatitis surveillance: a manual).

Indicator 4	**Incidence of HCV infection**
Indicator category	Global Core
M&E domain	Impact
Health domain (sub-domain)	Morbidity (Incidence)
Definition	Number and rate of new infections with HCV (anti-HCV positive)
Numerator	Total number of new infections with HCV defined as anti-HCV positive per year
Denominator	Total population minus people living with hepatitis C
Disaggregation	Sex, age, defined populations
Measurement method, sources of data	Modelled with inputs from repeated surveys of HCV infection: - General population (in selected countries with high prevalence) at least every 10 years - PWID, at least every 3 years - ANC, at least every 3 years - Other relevant groups according to national context
Program relevance and interpretation	As estimates of incidence are hard to obtain, incidence maybe modelled using point prevalence in targeted population. In theory, incidence estimate must take into account primary infections, re infections, spontaneous recoveries. An anti-HCV positive test will not distinguish between these three events. In practice, reinfection may be difficult to measure in routine surveys and may require cohorts of high-risk persons assessed in the context of research projects. This indicator reflects both the outcome and impact of hepatitis C prevention and treatment. It monitors trends, detects possible shifting patterns and projects the future direction of the epidemic.

Indicator 5	**Deaths from hepatocellular carcinoma (HCC), cirrhosis and liver diseases attributable to HBV and HCV infection**
Indicator category	Global Core
M&E domain	Impact
Health domain (sub-domain)	Mortality
Definition	Deaths from hepatocellular carcinoma (HCC), cirrhosis and chronic liver diseases attributable to HBV and HCV infections
Numerator	Number of deaths from hepatocellular carcinoma (HCC), cirrhosis and chronic liver diseases attributable to HBV and HCV infection: - Number of **hepatocellular carcinoma** (ICD-10 code C22.0) deaths multiplied by the proportion of HCC with chronic HBV and HCV infections - Number of **cirrhosis** deaths (ICD-10 codes K74.3, K74.4, K74.5, K74.6) multiplied by the proportion of cirrhosis with chronic HVB and HCV infections - Number of **chronic liver diseases** deaths(ICD-10 codes K72-K75) with chronic HBV and HCV infections
Denominator	Not applicable
Disaggregation	Sex, age (adult/children under 15)
Measurement method, sources of data	- Hospital/clinic based registers of service provision/ production monitoring - Prevalence of HBV and HCV infections among patients with HCC, cirrhosis and chronic liver diseases in sentinel sites National Civil Registration of vital statistics (CRVS) including mortality registers

Program relevance and interpretation	This indicator shows trends in deaths from chronic liver diseases among people infected with chronic hepatitis B, or hepatitis C. Interpretation of these indicators involves the estimation of an attributable fraction. Given the strong association between HBV and HCV infections and chronic liver disease, as a first approximation, the fraction of HCC, cirrhosis and chronic liver disease attributable to HBV and HCV infection can be estimated from the proportion of patients with these sequelae who are chronically infected with HBV and HCV. This indicator measures the ultimate outcome of viral hepatitis prevention, testing, care and treatment activities. Ongoing improvement of vital registration will facilitate measurement of this indicator through the analysis of sample and site mortality data. Data may be available at the regional and sometime national level for long time series.

ICD-10: International Statistical Classification of Diseases and Related Health Problems, tenth revision

Indicator 6	**Coverage of timely hepatitis B vaccine birth dose (within 24 hours) and other interventions to prevent mother-to-child transmission of HBV**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Prevention (vaccination)
Definition	Proportion of newborns who have received timely birth dose of hepatitis vaccine(within 24 hours) or from other interventions to prevent mother-to-child transmission of HBV (Percentage)
Numerator	Number of newborns receiving timely birth dose of hepatitis vaccine within 24 hours (HepB_BD) or benefiting from other interventions to prevent mother-to-child transmission of HBV
Denominator	Number of live births
Disaggregation	Age, place of residence, sex, socioeconomic status
Measurement method, sources of data	Routinely collected from program data (vaccine administrative coverage data, facility information systems) and through periodic immunization validation surveys at household level.
Program relevance and interpretation	This indicator monitors and guides immunization programs. It is only relevant for countries with universal hepatitis B vaccination. The EPI unit had been reintroduced the birth dose of Hepatitis B vaccine since 2016. The only differences with HepB_B3 (the third dose of hepatitis B vaccine) are that the denominator for HepB_BD is live births, and that only timely BD is monitored, not the doses of hepatitis B vaccine given later. In Myanmar, birth dose of hepatitis B vaccine was not being used for the last few years, but has been reintroduced in September 2016 for births in healthcare facilities.

Indicator 7	**Coverage of third dose hepatitis B vaccine among infants:**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Prevention (vaccination)
Definition	Proportion of infants (<12 months of age) who received the third dose of hepatitis B vaccine (HepB3) (Percentage)
Numerator	Number of infants (<12 months of age) who received the third dose of hepatitis B vaccine (HepB3)
Denominator	Number of infants (<12 months of age in a year)surviving to age 1 year
Disaggregation	Age, place of residence, sex, socioeconomic status
Measurement method, sources of data	Routinely collected from program data (vaccine administrative coverage data, facility information systems) or through periodic immunization validation surveys (household surveys).
Program relevance and interpretation	This indicator monitors and guides immunization programs as proposed by WHO and UNICEF.

Indicator 8	**Coverage of third-dose HBV vaccine among high risk individuals**
Indicator category	National
M&E domain	Outcome
Health domain **(sub-domain)**	Prevention (vaccination)
Definition	Proportion of high risk individuals (PWID, FSW, MSM, hemodialysis patients) who received the third dose of hepatitis B vaccine (HepB3)
Numerator	Number of high risk individuals (PWID, FSW, MSM, hemodialysis patients) who received the third dose of hepatitis B vaccine (HepB3)
Denominator	Estimated number of high risk individuals
Disaggregation	Age, place of residence, sex, risk factors
Measurement method, sources of data	Routinely collected from program data (vaccine administrative coverage data, facility information systems) or through periodic immunization validation surveys (household surveys).
Program relevance and interpretation	This indicator monitors and guides immunization programs particularly for the high risk groups.

Indicator 9	**Coverage of third-dose HBV vaccine among health care workers**
Indicator category	National
M&E domain	Outcome
Health domain (sub-domain)	Prevention (vaccination)
Definition	Proportion of health care workers who received the third dose of hepatitis B vaccine (HepB3)
Numerator	Number of health care workers who received the third dose of hepatitis B vaccine (HepB3)
Denominator	Estimated number of health care workers
Disaggregation	Age, place of residence, sex, occupation, occupational accident history
Measurement method, sources of data	Routinely collected from program data (vaccine administrative coverage data, facility information systems)
Program relevance and interpretation	This indicator monitors and guides immunization programs particularly for health care workers.

Indicator 10	**Facility level injection safety**
Indicator category	Global Core
M&E domain	Outcome
Health domain **(sub-domain)**	Prevention (injection safety)
Definition	Proportion of health-care facilities where all therapeutic injections are given with new, disposable, single-use injection equipment
Numerator	Number of sampled healthcare facilities where all therapeutic injections are given with new, disposable, single-use injection equipment
Denominator	Number of facilities sampled
Disaggregation	Facility type
Measurement method, sources of data	- This indicator is measured through health facility survey (facility data) or by checklist during monitoring visits. - Incorporate in the SARA survey to estimate the proportion of the last injection received that have been given from a new, unopened package on the basis of individual data.
Program relevance and interpretation	Assesses the implementation of policies to ensure that all health facilities practice injection safety and the safety of phlebotomy, lancet procedures, intravenous injections and infusions. No data on this indicator are available in Myanmar. Hence, a national injection safety assessment should be undertaken in the country.

Indicator 11	**Treatment coverage for hepatitis B**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Treatment and care
Definition	Proportion of HBV-infected persons who are currently on treatment
Numerator	Number of persons with chronic HBV infection who are currently receiving treatment
Denominator	Number of persons with chronic hepatitis B virus infection
Disaggregation	Sex, age, high risk/burden populations, HIV status, place of residence (township)
Measurement method, sources of data	Numerator: program records (clinical records of healthcare facilities providing hepatitis treatment and care). Denominator: modelling estimates of the number of HBV-infected persons

Indicator 12	**Treatment initiation for hepatitis C**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Treatment and care
Definition	Proportion of persons diagnosed with chronic HCV infection started on treatment during a specified time frame (e.g. 12 months)
Numerator	Number of persons diagnosed with chronic HCV infection who initiated treatment during a specified time frame (e.g. 12 months)
Denominator	Number of persons diagnosed with chronic HCV infection during a specified time period (e.g. 12 months). Note: Those already diagnosed, treated and cured would be excluded
Disaggregation	Sex, age, high risk/burden populations, medicine type (interferon or DAA-based), HIV status
Measurement method, sources of data	Numerator: program records (clinical records of health care facilities providing hepatitis treatment and care). Denominator: program records and /or modelling estimates
Program relevance and interpretation	This indicator measures the number of people living with HBV/HCV infection who were evaluated for hepatitis disease progression, found eligible and placed on treatment. Disaggregation can indicate degree of equity in enrolment among specific priority populations. Trends over time reflect on progress to treat patients. National representativeness: if this indicator is only produced in a sub-set of facilities, comments should be added on the source of information, sample size and whether the information is representative of all sites where hepatitis treatment and care delivered.

Indicator 13	**Viral suppression for chronic hepatitis B patients treated**
Indicator category	Global Core
M&E domain	Outcome
Health domain **(sub-domain)**	Treatment and care
Definition	Proportion of patients with chronic HBV on treatment for which HBV viral load is suppressed
Numerator	Number of patients with chronic hepatitis B infection on treatment who have a suppressed viral load (HBV DNA not detectable), based on viral load (VL) measurement in the past 12 months
Denominator	Number of patients with chronic HBV infection on treatment and assessed for viral load (VL) in the past 12 months
Disaggregation	Sex/gender, age
Measurement method, sources of data	Program records, cohort study, patient records, combined with estimates for the population with no viral load data
Program relevance and interpretation	Measures virologic suppression achieved among all those currently on treatment regardless of when they started. This indicator does not give the coverage of the VL testing. It is recommended to indicate alongside this indicator if viral load is done to all or only a few patients and give proportion of VL testing coverage.

Indicator 14	**Cure for chronic hepatitis C patients treated**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Treatment and care
Definition	Proportion of chronic hepatitis C patients cured among those who completed treatment
Numerator	Number of patients who completed hepatitis C treatment and had sustained virologic response (SVR) based on viral load measurement 12-24 weeks after the end of treatment
Denominator	Number of patients who completed hepatitis C treatment and were assessed for SVR 12-24weeks after the end of treatment
Disaggregation	Sex, age, medicine type (interferon or DAA based)
Measurement method, sources of data	Program records, cohort study, patient records, combined with best estimates for the population with no viral load data
Program relevance and interpretation	Measures how many are cured among all those who completed treatment

Indicator 15	**Needle-stick injuries among health care workers**
Indicator category	National
M&E domain	Outcome
Health domain (sub-domain)	Prevention
Definition	Reported occurrence of needle-stick injuries in health care workers
Numerator	Reported number of occurrence of needle-stick injuries in health care workers in as year
Denominator	Not applicable
Disaggregation	Age, sex, occupation, severity of accidents
Measurement method, sources of data	Source of data: hospital accident records. This indicator is collected by hospital administrators and reported to NHCP.
Program relevance and interpretation	This indicator is collected by the facilities where any of the health care workers has needle stick injuries and assesses the universal precaution and safe injection.

Indicator 16	**Blood screening coverage**
Indicator category	National
M&E domain	Outcome
Health domain (sub-domain)	Prevention
Definition	Proportion of blood units screened for blood borne diseases – hepatitis B, hepatitis C within blood banks
Numerator	Number of blood units screened for HBV and HCV within a given time frame (e.g. 12 months)
Denominator	Number of blood units collected within a given time frame (e.g. 12 months)
Disaggregation	Age, sex, occupation, frequency of blood donation
Measurement method, sources of data	Program data on blood banks
Program relevance and interpretation	This indicator is collected by the National Blood Center and assesses the implementation of policies to ensure that all blood banks implement safe blood screening practices.

Indicator 17	**Needle–syringe distribution**
Indicator category	Global Core
M&E domain	Outcome
Health domain (sub-domain)	Prevention (PWID)
Definition	Number of needles–syringes distributed per person who injects drugs
Numerator	Number of sterile needles– syringes distributed in past 12 months by needle–syringe programs
Denominator	Number of people in the country who inject drugs
Disaggregation	Sex, age, type of setting (community, prison/closed setting)
Measurement method, sources of data	Numerator: program records, e.g. needle–syringe program log books Denominator: population size estimation exercises
Program relevance and interpretation	This indicator is collected by the National AIDS Program and is asked for annually

Indicator 18	**IEC distribution**
Indicator category	National
M&E domain	Outcome
Health domain (sub-domain)	Prevention
Definition	Number of IEC materials distributed to general population
Numerator	Number of IEC materials distributed in past 12 months
Denominator	Number of IEC materials produced
Disaggregation	Type of IEC materials, types of facilities
Measurement method, sources of data	Program log books, Logistic Management Information System
Program relevance and interpretation	This indicator is collected by the National Hepatitis Control Program and Health Literacy Promotion section

Indicator 19	**Infrastructure for HBV and HCV testing**
Indicator category	Global Core
M&E domain	Input
Health domain (sub-domain)	Technology and commodities (in-vitro diagnostic)
Definition	Ratio of facilities with capacity to test individuals for chronic hepatitis HBV and/or HCV per 100,000 population according to testing methods: - Molecular methods (*HCV RNA, HBV DNA)* - Serological methods (*HBs Ag, Anti-HBc, Anti-HCV)*

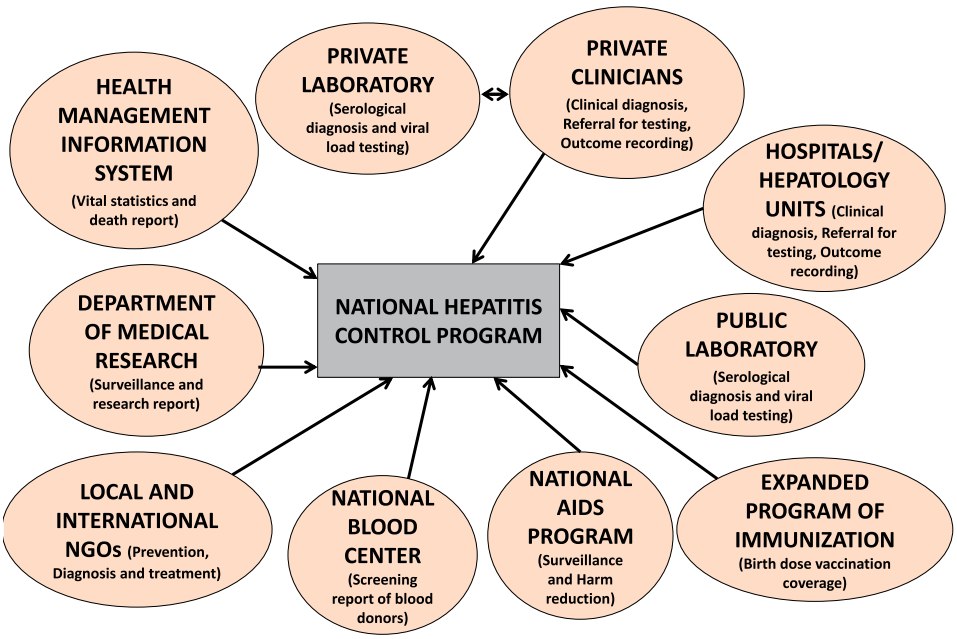
Numerator	Number of testing facilities with capacity to test for chronic hepatitis • Tests to be used depend on national recommendations based upon WHO guidelines. • Facilities include health workers using Point Of Care [POC] testing, health facilities, and laboratories.
Denominator	Number of persons (total population)
Disaggregation	-Chronic HBV and chronic HCV infection testing capacity -Testing facility (e.g. clinical laboratory, etc.), -Geographical location
Measurement method, sources of data	Information from this indicator is derived from program data Tests to be used depends on national recommendations based upon WHO guidelines
Program relevance and interpretation	Measures trends in availability of laboratory services for viral hepatitis B and C testing In Myanmar, the number of facilities providing serological testing is not available; however, the number of these facilities is relatively small. Further, only a few facilities offer molecular tests, and these are mostly in the private sector. There is a potential for expanding these services through the molecular laboratories being set up as part of HIV and TB programs (GeneXpert machines). A mapping can be done in selected parts of the country to assess the currently available infrastructure for serological and molecular testing for HBV and HCV testing. This should also include facilities outside the public system.

Indicator 20	**People living with HCV and/or HBV diagnosed**
Indicator category	Global Core
M&E domain	Output
Health domain (sub-domain)	Testing
Definition	Proportion of people living with chronic HBV and/or HCV infections who have been diagnosed with HBV and/or HCV
Numerator	Number of person with chronic HBV and/or HCV infections who have been diagnosed
Denominator	Estimated number of person with chronic HBV and/or HCV infections
Disaggregation	Sex, age (adult/children, more than 15 and less than 15), high risk, pregnant women, HIV infection
Measurement method, sources of data	There are two measurement methods possible: *1) Counting persons reported with chronic infection and dividing this number by the estimated size of the population infected.* In that case, the numerator is the number of persons reported with chronic HBV and/or HCV infection from health-care facilities (case reporting) and/or laboratories, while the denominator is the estimated size of the population infected (modelled or estimated from a biomarker survey). This method estimates the number of persons newly identified or newly reported, which, after identification of duplicates, may be cumulated over time. *2) Using survey data where persons are asked if they are aware of their viral hepatitis infection status in population surveys.* In that case, the numerator is the number of persons reporting being aware of their chronic HBV or HCV infection during the survey while the denominator is the number of persons identified as infected during the survey. This method estimates the cumulated number of persons aware of their status.
Program relevance and interpretation	Estimating the proportion of person with chronic HBV and/or HCV infections who know their infection status measures the entry point to the continuum of care.

2. Data flow, data collection, analysis and reporting

Program data and surveillance data will be collected according to the diagram below. The National Hepatitis Control Program management will take an integrated approach with other programs and stakeholders, thus the coordination mechanism of national program is very crucial for successful management. The Program Manager at the central level is the main focal person responsible for the data governance and program achievement. The mapping of the data flow is described in the figure 3 below.

Fig 3. Data flow of the National Hepatitis Control Program



Activities of data collection start from the facilities providing various health services along the continuum of care – diagnosis (laboratory services), treatment and care, blood banks and prevention activities. An electronic patient management database (OpenMRS) is used in the National AIDS Program and National TB Program, and the NHCP has adopted OpenMRS as well for the purpose of patient case management and national reporting of the indicators related to the screening, diagnosis, treatment and care cascade. The OpenMRS is interoperable with DHIS 2 platform, so aggregated data can be transferred to the DHIS 2 database for national level reporting.

In order to provide progress in the implementation of program activities, there is need for the M&E system with its data flow mapped out to be able to spontaneously collect data for measuring impact /outcome indicators and programmatic indicators. After the data and report are collected, dissemination of information will be utilized for further planning of the program.

Descriptions along the following areas should be provided:

- **Routine data collection (programmatic indicators)**

  This will be collected/reported routinely from service delivery points and other intermediate levels to the National level. The reporting forms should be addressed to the Program Manager who is responsible for checking of missing senders and the timeliness of reports.

- **Routine data recording and reporting tools**

  The data recording tools and reporting tools should be standardized across the facilities – public and private partners. These tools are developed collaborating with TWG members of M&E group. The vaccination register, clinical treatment registers, pre-treatment registers, laboratory registers (HCV testing and Viral Load registers), dispensing registers and stock registers will be standardized across the public entities and would be shared among stakeholders if they are interested to use the same register format. 10th

  These supporting documents (or source documents) needs to be kept in the respective facilities units, however, in case of mistake or data error, the corresponding facilities are requested to verify the data error on the source documents by National Hepatitis Control Program.

  As mentioned above, with the support of CHAI, the introduction of OpenMRS to National Hepatitis Control Program was launched along with the quick start program. The case based data recording is facilitated by OpenMRS at the facility level and the report forms can automatically be generated.

- **Surveillance data collection**

  The case-based surveillance data (e.g. development stages of liver fibrosis, liver carcinoma, etc.) should be collected from the Department of Medical

Services. The case-based surveillance data can be obtained from the patient management cards used at the treatment facilities. The general hospitals, township hospital, private hospitals, NAP (if NAP considers treating the patient) should report the progress of the patient's condition.

The sero-surveillance data collected from special target groups report to the national program from the Department of Medical Research and the NAP.

- **Reporting**

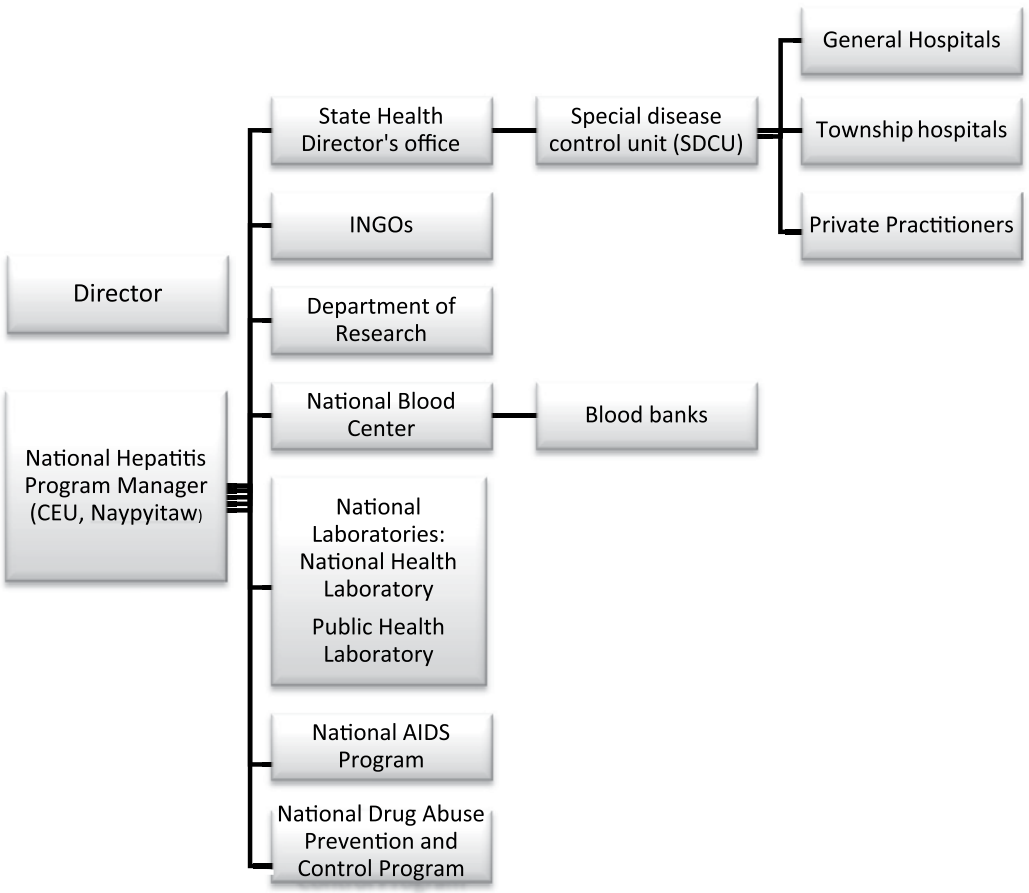
For indicator at the coverage/output level, the performance has to be reported by respective sections every month in the reporting format to the Program Manager in the aggregated format. Reports from OpenMRS should be compiled on the last day (31st) of the month and sent to the National Hepatitis Control Program not later than 10th of the next month by email and hard copy. The National Hepatitis Control Program is considering the transition of paper-based reporting to the electronic based reporting based on OpenMRS and then to DHIS-2. From other programs such as the National AIDS Program and the National Drug Abuse Prevention and Control Program, request for harm reduction activities report for example, needle-syringe distribution, hepatitis B test screening among PWID and the hepatitis vaccination to PWID.

- **Information/report flow and feedback mechanisms**

The strategic information flow is drawn as below. From the public hospitals with electronic data recording, the patient indicator reports should be automatically reported by OpenMRS. The data entry clerk at the central epidemiological unit should collect the data submitted from the respective domain. On the day of receiving monthly report, he/she should check data quality dimensions by entering into report receipt register whether the report comes on time, the completeness of the report and error on the report and record in the data quality database or document. The reports should be compiled up to 30th/31stof the month and reporting deadlines be set on every 7th of the month. If any error is found, he/she should check with the sender for correction by email, telephone or postal mail. Every step in the verification, he/she has to take notes or record documentation and let the original sender to resubmit the correct one when error is found. Then, data will be entered into the database and is

supposed to be randomly checked by immediate supervisor. The data compilation and analysis is carried out by the Program Manager and results will be sent to the immediate supervisor. After receiving permission from the supervisor, the results should be released nation or regional wise (see fig 4).

Fig 4. Data flow diagram of the hepatitis program



- **Infrastructures available for data capturing and reporting (paper-based system, computers, internet connections, etc.)**

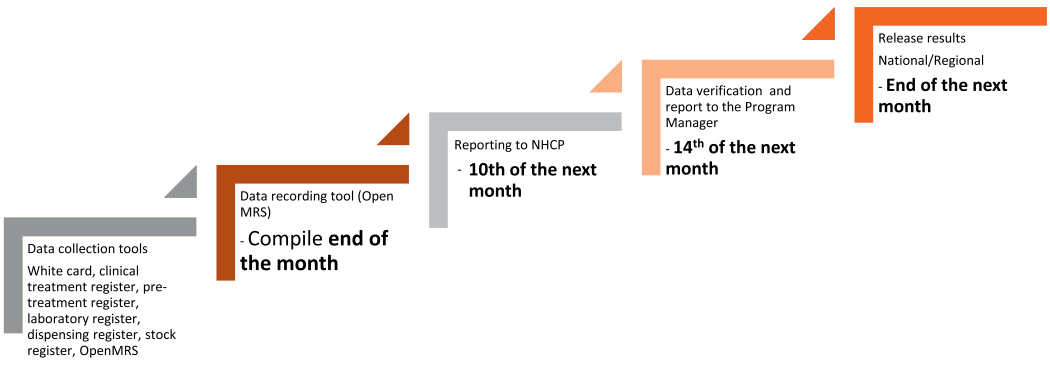
The monthly reporting forms will be submitted and addressed to Program Manager by email or by post with respect to deadline. The data storage house will be in the National Hepatitis Control Program, Nay Pyi Taw, preferably, the database will be developed to enter the aggregated data which may be excel sheet or access database. The data backup should be

every 2 weeks in the USB drive or in the hard disk. Case-based reporting system will be developed linked to the DHIS-2 online access.

- **Information products, timeline, and target audience**

Information will be collected in the figures as well as in the narrative report. The indicators are set by collective agreement of the TWG group and are followed according to the National Strategic Plan. The reporting deadline from the hospitals and private sectors would be every 10th of the next month. The M&E officer will check, verify and report to the Program Manager on every 14th of the next month. Thus, the Program Manager analyzes and reports to the higher level of the department and share to the respective organizations at the every 30th of the next month (see fig 5).

Fig 5. Routine Data Reporting Scheme



- **Information dissemination strategy**

Information should be shared and spread by the different levels of program process. The dissemination strategy should be focused on the type of audience, type of messages, method of dissemination and timing of the dissemination. Reports will be presented at the annual meetings.

- **Storage of original data**

All of the patients' charts are confidential and stored in cabinets systematically. These charts are accessed by unit staff only. The records

are kept in the serial order, and that of the expired patients are kept in a separate file. The medical records are to be kept for at least 5 years after patients has left the care, either expired or defaulted.

For the surveillance data should be kept under lock and key as in hard copy or with password lock as in soft copy. The records will also be destroyed after 5 years of the projects.

3. Evaluation, reviews, survey, surveillance or special studies

It involves systematic collection and analysis of data to make decisions. Evaluations may be process oriented (how is the program delivered or is it being delivered as intended) or looking at results from outcome or impact evaluations.

In this section, description of existing practices, gaps and plans/schedules should be provided for conducting:

Reviews and Evaluations

- Program reviews –The Program Manager is responsible for holding and gathering stakeholders to discuss the achievement, failures, challenges and find for solutions.

- **Quarterly Reviews**

  The three months reviews is a collective exercise where progress towards targets are reviewed and progress of activities are examined. It is a crucial moment to discuss key important finding, difficulties and solutions to improve the program among stakeholders.

- **Midterm and Annual Reviews**

  Annual reviews are held and based on the results of the site quarterly reviews, midterm, reviews are held with key program staff according to the budget allowance. The midterm and annual reviews are generally carried out where there is reprogramming of targets, achievements and failures, bottlenecks, change of contexts, and updating work plans per site.

- **Program Evaluation**

  Specific attention has to be paid to periodic evaluation and use of

performance indicators, with resources allocated at least mid-term and at the end of the project. This will allow for the rational allocation of resources throughout the project's life.

The program evaluation by the National Hepatitis Control Program should be considered by hiring external independent evaluators, or routine/ specific internal evaluators led by national program and partners.

Surveys and surveillance

- **Population based survey -** surveys on the general population to obtain baseline data.

- **Health facility based surveys**

  The national program is considering KAP survey on the health care workers during the second year of program implementation.

- **Surveillance**

  Sero-surveillance

  Since many persons with new HAV, HBV, and HCV infections, particularly young children, are asymptomatic and many cases of symptomatic disease are not reported as notifiable disease. Thus, sero-surveys are needed to assess the extent of the disease burden associated with viral hepatitis and to monitor the impact of prevention and control programs. National seroprevalence data for HAV, HBV, and HCV infections will be conducted by the assistance of the department of medical research and data compilation will be done by the national program. The selected sero-surveys should be conducted at the regional level and of special targeted groups which may be chosen, the general population and specific groups (e.g., Health Care Provider's, dialysis patients, multi-transfused patients, street children, PWIDs, school teachers, and sanitation workers).

  Infection with hepatitis A virus or hepatitis E virus causes acute disease, which usually present as acute jaundice syndrome, and occasionally as acute liver failure; a large proportion of infections are asymptomatic. Transmission of these infection is fecal-oral. In addition, hepatitis B virus infection can also present as acute hepatitis. Presentation of hepatitis C with acute illness is quite infrequent. Their diagnosis needs two types of surveillance:

a. Outbreak detection and response (syndromic surveillance)

This needs country-wide syndromic surveillance, as a part of the general communicable disease surveillance. This should allow detection of any clusters of cases of hepatitis-like illness.

This reporting is done using a clinical definition at the primary contact (e.g. based on Form P in Myanmar). The data should include number of cases with acute hepatitis syndrome, and may include basic demographics (time, place, person – e.g. age, sex, place of residence, any shared features, etc.) of the cases, and does not include any laboratory tests. A report of an unusual cluster should lead to an outbreak response to investigate the cause of the outbreak and institution of control measures.

The number and size of such clusters over time will also provide information on disease trends.

b. Enhanced case reporting (sentinel site surveillance)

This surveillance system, in a few sentinel sites, includes testing of patients presenting with acute hepatitis for specific laboratory markers of various forms of acute hepatitis (e.g. hepatitis A, B, E, etc.). This should be started in one or a few selected centers of excellence. For cases at these centers, more detailed clinical and risk factor data will be collected.

The data from this form of surveillance provide data on relative frequency of various forms of acute hepatitis, time trends for each type of hepatitis and risk factors for various types of viral hepatitis.

In Myanmar, it may be crucial to begin with sentinel site surveillance at a few representative sites, since this will provide data on incidence of various forms of viral hepatitis, including that of hepatitis B, which is a component of the definition of elimination. In addition, syndromic surveillance may be strengthened over time, though this may not be as urgent.

Chronic Liver Disease Surveillance

Surveillance for HBV and HCV-related chronic liver disease can provide information to measure the burden of disease, determine natural history and risk factors, and develop and evaluate the effect of therapeutic and prevention measures on incidence and severity of disease.

This chronic liver disease surveillance should be piloted where the hepatologists are interested. This will provide baseline data and warning for a broader surveillance system for chronic liver disease. As the primary source of data regarding the incidence and natural history of chronic liver disease, this network will be pivotal for monitoring the effects of education, counseling, other prevention programs, and new therapies on the burden of the disease.

- **Research and Special Studies**

The research questions are prioritized and the most important studies are to be conducted. TWG M&E and research group is mainly responsible for coordination of interest group on research to develop research agenda and also make decisions for conducting the most required/suitable research studies. This group also provides endorsement for those who wish to carry out researches and support the submission of proposal to the ethical board of department of medical research. The group also provides technical assistances to any organizations.

- **Implementation research**

i. Determine incidence and prevalence in general population and specific groups

ii. Determine incidence and prevalence of hepatitis B and C in advanced disease (cirrhosis and HCC, etc.)

iii. Conduct qualitative research with Health Care Provider's to identify barriers (e.g., nurse/patient ratio, work overflow, and lack of knowledge) to adhere to recommended practices and preventive measures (e.g., HBV vaccination).

iv. Conduct molecular studies of hepatitis B and C in Myanmar

- **Others**

- Development of tools (e.g., protocols, questionnaires) and guidelines for surveys, surveillance, OR, and special studies

- Training, workshops and meetings related to surveys, surveillance, OR and special studies (including dissemination of findings)

4. Data quality assurance mechanisms and related supportive supervision

The mechanism for ensuring the quality of data during data collection, transfer, compilation, analysis and storage is the responsibility of each and every staff at all levels. The main data quality dimensions – accuracy, missing, deadlines, completeness and integrity are accounted for in measuring data quality.

In this sense, human resources such as data entry clerks, supervisors for data verification, and data managers for the data compilation and data analysis are most responsible and indispensable for data management.

Thus, routine data quality assessment should be carried out with the routine data quality assessment tools which should be developed before the program implementation. With this tool, the data assessment should be planned each month for assessing data accuracy and consistency of primary data before and after the report.

The assessment team should be formed and the higher level should take supportive supervision to its lower level. The six-monthly internal Data Quality Assurance visits should be conducted at selected sites with focus on specific core indicators. The feedback mechanism is to develop and share the findings within the TWG members and also back to the respective service delivery site.

5. M&E coordination

M&E coordination, partnership and advocacy are the most crucial requirement for program implementation. The National Hepatitis Control Program plays a leading role in M&E coordination with partners and organizes research and studies, leads TWG meetings, reviews and advocates. The M&E activities should include-

- M&E coordination with other departments –National Drug Abuse Prevention and Control Program, National AIDS Program, National TB Program, Expanded Epidemiological Unit, Health Management Information System, National Blood Center, Health Literacy Promotion Unit, Medical Services, Medical Research and Human Resource Management
- M&E coordination with WHO, UNAIDS and other INGOs: CHAI, MSF-H, MSF-CH, BI-MM, Alliance, CPI, MAM, MDM, AHRN, SARA and UNOPS

- M&E coordination mechanisms (including management structures and roles)
- M&E partnerships include M&E Technical Working Groups (TWG) functions
- M&E assessments/reviews, meetings
- Alignment and harmonization on indicators, information/report flows, reporting timeline, etc.

6. M&E staffing and capacity building

M&E staff should be recruited for the program in order to manage effective program implementation. In the aspects of human resource and capacity building:

- Develop job descriptions
- Review of existing M&E human resources capacity (existing human resource, strengths and gaps), capacity needs assessment
- Develop capacity building plans
- Workshops and meetings to build capacity
- Develop human resource database
- Equip with computers, access to internet, email and mobile phones
- Activities to improve analytical capacity of the system: ability to collect, analyze and interpret data from different sources, ability to provide analytical feedback and to translate the data into recommendations for decision making and action

7. M&E budget and work plan

Generally the hepatitis program will borne the cost of M&E about 2-4% of the total program expenditure. This include all M&E activities, including *but not limited to*, any strengthening measures identified through a self-assessment, external assessment, data quality audit, etc.

Costs of the impact/outcome measurement framework (including costs of routine data collection, surveys and sentinel sites) should also be included in the M&E budget and work plan, including any costs for technical assistance. Identification of the funding source should allow resource tracking and provide a holistic picture on M&E related resource allocations. The M&E cost categories and detailed description is listed in table below. (See table 3 and table 4)

Table 3. M&EAction plan

No	Activities	Output	Outcome
Establish a national Strategic Information system for comprehensive prevention and care of Viral Hepatitis interventions and activities			
1	Develop national monitoring and evaluation operation plan on hepatitis	National M&Eplan developed	Evidence based policy formulation and planning for effective program implementation
2	Develop M&E forms and recording and reporting systems	Complete M&Esystem designed	
3	Coordinate with private hepatitis service providers in order to harmonize in country M&E procedures and integrate private sector reporting	Agreement from private sector on data to collect and share with national program	
4	Estimate the costing and expenditure of the program	Costed operational plan and M&Eplan set up with targets	
5	Train health care workers and health facility administrators on monitoring system	Trainings completed	
6	Collect regular monitoring data	Regular M&Edata collected	
7	Disseminate annual report on program performance	Report completed	
8	Establish strategic plan evaluation system	Program evaluations completed	
9	Track treatment cohorts for retention analysis	Cohort study completed	

Establish national hepatitis surveillance system.			
1	Establish national hepatitis surveillance system particularly hepatitis B virus and hepatitis C virus infection	Surveillance system established	Availability of national and regional level data on epidemiology and burden of the disease
		Case investigation system implemented	
2	Conduct regular epidemiological surveys of HBV and HCV	Survey completed	
Strengthen research agenda for evidence based documentations and planning.			
1	Compile previously conducted research and assess research gaps	Compilation and gap assessment completed	Research results used for strategic information and planning
2	Develop research agenda	Research agenda developed	
3	Identify partners to collaborate on research at national and international level	Coordination mechanism developed with partners	
4	Implement priority research studies	Research conducted	
5	Dissemination of research findings	Research findings disseminated	

Table 4. M&E cost categories and detailed description according to the Operation Plan (2017-2020)

S.D	Descriptions	Re-sponsi-bility	2017 USD	2018 USD	2019 USD	2020 USD
4.1	**Establish a National Strategic Information System for the Cascade of Services**		**54,815**	**51,361**	**54,920**	**58,479**
4.1.1	Develop National Hepatitis M&E plan	NHCP	**13,000**	**17,544**	**17,544**	**17,544**
4.1.2	Develop Electronic Database for Recording and Reporting	NHCP	**41,815**	**25,116**	**28,676**	**32,235**
4.1.3	Conduct review meetings	NHCP	**-**	**8,700**	**8,700**	**8,700**
4.2	**Establish a National Surveillance System for program and disease monitoring of viral hepatitis**		**-**	**1,740**	**1,740**	**1,740**
4.2.1	Mortality surveillance of chronic hepatitis infection per training to cirrhosis and hepatocellular carcinoma		**-**	**1,740**	**1,740**	**1,740**
4.3	**Strengthen research agenda for evidence based documentations and planning**		**150,000**	**150,000**	**150,000**	**150,000**
4.3.1	Conduct Research Initiatives	DMR	**150,000**	**150,000**	**150,000**	**150,000**
4	**Strategic Information**	**Total**	**204,815**	**203,101**	**206,660**	**210,219**

For each M&E activity, regardless of whether the activity is a routine or a one-time activity, include:

i. Timeline for implementation
ii. Responsible partners/department for implementation
iii. Estimated budget
iv. Funding source
v. Funding gap

Table 6: Proposed logical framework

Indicator	Baseline	Targets 2017	Targets 2018	Targets 2019	Targets 2020	Data source	Frequency	Entity responsible
Impact:								
Prevalence of chronic HBV infection	6.5%					Survey data	Annual	DMR
Prevalence of chronic HCV infection	2.7%					Survey data	Annual	DMR
Cumulated incidence of HBV infection in children 5 years of age	NA	NA				Survey data	Annual	DMR
Incidence of HCV infection	NA	NA				Survey data	Annual	DMR
Deaths from hepatocellular carcinoma (HCC), cirrhosis and liver diseases attributable to HBV and HCV	NA					HMIS	Monthly	Department of Med services

Indicator	Baseline	Targets 2017	Targets 2018	Targets 2019	Targets 2020	Data source	Frequency	Entity responsible
Outcome:								
Coverage of timely hepatitis B vaccine birth dose (within 24 hours) and other interventions to prevent mother-to-child transmission of HBV	15% of institutional deliveries; 2% of all deliveries	20% of institutional deliveries 75% of all infants born in hospitals receive TBD	80% of all infants born in hospitals receive TBD	85% of all infants born in hospitals receive TBD	90% of all infants born in hospitals receive TBD	EPI unit		Department of Med services
Coverage of third dose of hepatitis B vaccine among infants	75%	76%	77%	78%	80%	EPI unit		DoPH
Coverage of third-dose HBV vaccine among high risk individuals	NA	20%	25%	30%	50%	NAP and INGOs		DoPH and Department of Med services, INGOs
Coverage of third-dose HBV vaccine among health care workers	NA					Hospitals		Department of Med services

Indicator	Baseline	Targets 2017	Targets 2018	Targets 2019	Targets 2020	Data source	Frequency	Entity responsible
Facility level injection safety (proportion of health-care facilities where all therapeutic injections are given with new, disposable, single-use injection equipment)	NA					Survey data		Department of Med Research
Treatment coverage for hepatitis B	<1%		1000 new patients	2000 new patients	4000 new patients	Program data		Department of Med services
Treatment initiation for hepatitis C	<1%	2000 new patients	10,000 new patients	20,000 new patients	30,000 new patients	Program data		Department of Med services
Viral suppression for chronic hepatitis B patients treated	NA	1,600				Program data		NHL and PHL
Cure for chronic hepatitis C patients treated	NA	2,000				Program data		Department of Med services

Indicator	Baseline	Targets 2017	Targets 2018	Targets 2019	Targets 2020	Data source	Frequency	Entity responsible
Needle-stick injuries among healthcare workers	NA					Program data	Annual	Department of Med services
Blood screening coverage (proportion of blood units screened for HBV and HCV within blood banks)	NA					Program data	Annual	National blood center
Needle-syringe distribution (number of needles-syringes distributed per person who injects drugs)	18,477,176 (222 needle-syringes/ PWID/year)	330				Program data	Annual	NAP

Indicator	Baseline	Targets 2017	Targets 2018	Targets 2019	Targets 2020	Data source	Frequency	Entity responsible
IEC distribution	NA	Develop IEC materials including pamphlets (100,000), posters (50,000) signboards (20) and TV spots (12 times).	Develop IEC materials including pamphlets (200,000), posters (50,000) signboards (20) and TV spots (12 times).	Continue using IEC materials including pamphlets (300,000), posters (100,000) signboards (20) and TV spots (12 times).	Continue using IEC materials including pamphlets (400,000), posters (100,000), signboards (20) and TV spots (12 times).	Health Literacy promotion		National Hepatitis Control Program
Output:								
Infrastructure for HBV and HCV testing (ratio of facilities with capacity to test individuals for chronic hepatitis HBV and/or HCV per 100,000 population)	More than 300 i.e hospitals that have transfusion unit					Laboratory data		Laboratories
People living with chronic HBV and/or HCV diagnosed	<1%				25%	Program data		Laboratories