



وزارة الصحة  
Ministry of Health



# The Healthy Marriage Program

Work Manual

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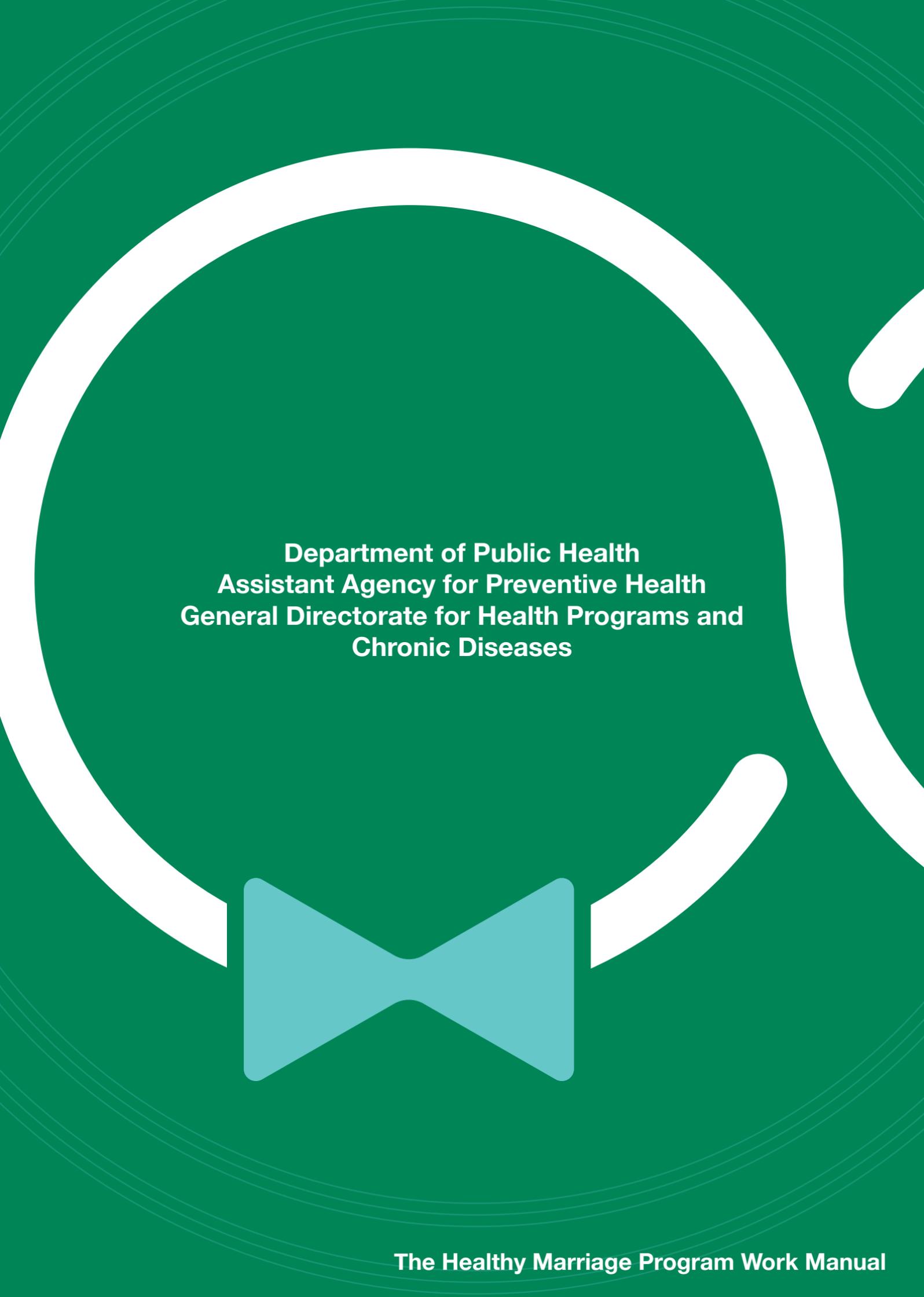
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**Department of Public Health  
Assistant Agency for Preventive Health  
General Directorate for Health Programs and  
Chronic Diseases**

**In the Name of Allah, the  
Beneficent, the Merciful**



**We thank  
everyone who participated in  
the preparation and review of  
this manual**

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## » Foreword

The Kingdom's leaderships have devoted their attention to the building of healthy and sound generations through the Healthy Marriage Program that obligates both parties entering into a marriage contract to bring with them a medical screening certificate before the contract is made, and mandates that this step is made one of the requirements for contract registration, yet allowing both parties the freedom to finalize the marriage irrespective of whether the medical screening results were positive or negative.

Additionally, the Ministry of Health has provided all requirements for the program from the qualifying of screening centers to the training of personnel in all regions of the Kingdom, among the most important of those requirements being a guiding and practical work manual to act as a guide for program personnel and resource for training and operational procedures. This manual is an updated edition of the previous manual issued in 2015 G considering the latest developments in the program and introduction of a number of interventions, as is expected from an achieving and pioneering program.

## » Definitions

- **The healthy marriage:** A state of wholeness and harmony (physical, psychological, social, and health) between the marriage partners that leads to interaction between several influential factors, inherited and acquired, which are transferred to the children, with the aim of building a sound, stable family successfully performing its role, and fulfilling one of the fundamental human rights.
- **Premarital screening:** Carrying out laboratory tests for partners planning to get married to check for the presence of selected hereditary blood disorders (hemoglobinopathies, especially sickle cell anemia and beta thalassemia) and infectious diseases (hepatitis B and C, and HIV) with the purpose to provide the engaged couple with medical counseling on the risk of transmission of those diseases to the spouse or future children and choices and alternatives to help them plan for a healthy family.
- **Hereditary blood disorders:** A group of blood disorders transmitted from parents to children that result from a defect in the structure and components of red blood cells making them unable to carry out their natural function and leading to the emergence of symptoms in affected persons. The following blood disorders are included in the program: [sickle cell anemia and beta thalassemia](#).
- **Unaffected person:** A person who does not carry the disease trait.
- **Carrier:** A person carrying the disease trait but is asymptomatic.
- **Affected person:** A person who carries the disease trait and shows disease symptoms.

- **Safe marriage (compatible):** Any marriage in which one, or both, partner is unaffected by the hereditary blood disorders included in the program, irrespective of whether the other partner is a carrier for the disorder or affected by it.
- **Unsafe marriage (incompatible):** Any marriage in which both partners are affected by a hereditary blood disorder included in the program or are carriers for it, or where one partner is affected and the other is a carrier for a disorder.
- **Infectious Diseases:** Diseases that infect humans through the transmission of viruses from one person to another. The following infectious diseases are included in the program: hepatitis B, hepatitis C, and HIV.
- **Consultation:** A meeting to engage in face-to-face discussion, where one person is able to help another person, couple, family, or group to define their needs and make decisions.
- **Medical consultation:** An interactive process between a specialized individual (the consultation physician) who will provide medical recommendations and pertinent information in an objective manner in order to help the consultation recipient (the person planning to get married) in making the correct choices in an appropriate professional and social environment. This process aims to provide a suitable psychological atmosphere to ensure that the recipient is able to make the right decision in an atmosphere of confidence, integration, and privacy.
- **Medical consultation clinic:** The place designated for medical consultation.
- **Medical consultation provider:** A member of the medical team specialized in medical and genetic counseling, or a person who is academically and medically trained to provide health consultation services to individuals planning to get married and families seeking information on the risks of hereditary or infectious diseases.

**Section  
On**

**Implementation Policy and Strategic  
Framework for the Healthy Marriage Program**

## » Implementation Policy and Strategic Framework for the Healthy Marriage Program

Hemoglobinopathies are the commonest hereditary diseases in humans. The World Health Organization (WHO) estimated that **at least %5 of the world's population are carriers for hereditary diseases**, especially hemoglobinopathies (%2.9 for thalassemia, and %2.3 for sickle cell anemia). Sickle cell anemia and thalassemia represent one of the public health problems in the Kingdom, placing enormous health and economic burdens on both the society and affected individual. As a response, Council of Ministers Resolution no. 4/B/54504 dated 1424/11/15H was issued, dictating compulsory premarital screening and consultation.

## » Target Audience

This manual is intended primarily for health practitioners involved in the program including policy makers, managers, employees, coordinators, and others responsible for the choosing of strategies and implementation of premarital screening for the prevention of hereditary and infectious diseases at both the primary health care and hospital levels.

### Premarital screening center personnel

- Premarital screening center supervisor.
- Reception clerk.
- Health educator.
- Vaccination nurse.
- Phlebotomist.
- Laboratory technician, laboratory specialist.
- Laboratory physician.
- Medical consultation clinic physician.

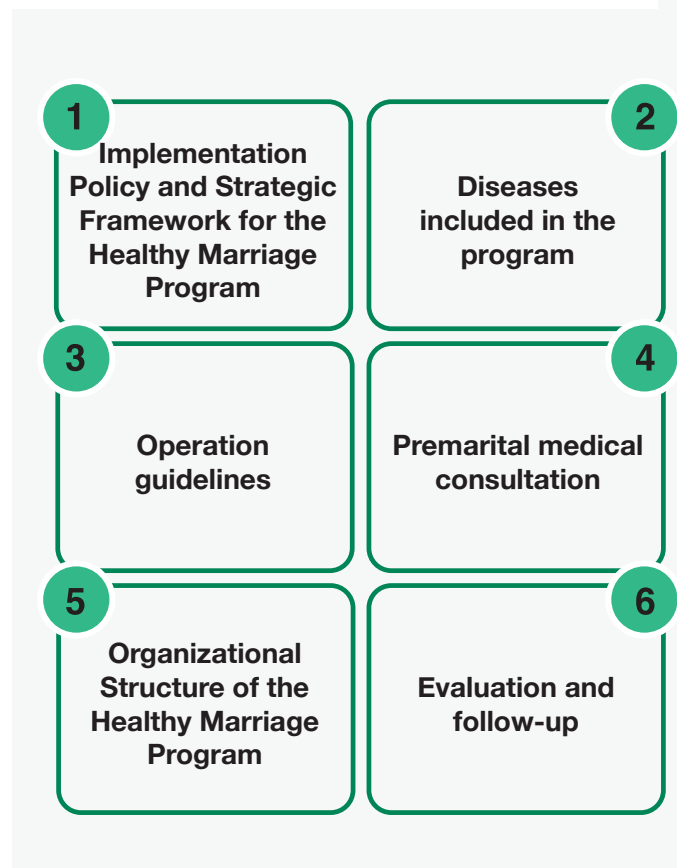


Figure 1: Sections of The Healthy Marriage Program Work Manual

## » **How to Use this Manual**

- The Healthy Marriage Program Work Manual was issued by the MOH and contains the technical components required for the provision of services in a comprehensive manner
- This manual provides the road map for the implementation of premarital screening in all regions of the Kingdom.
- The manual presents various issues, each serving its main purpose, categorized into sections dealing with the components of the Healthy Marriage Program, which can be discussed as separate units during execution and training or as necessity dictates.
- To improve basic knowledge and gain maximum benefit from this manual, it is recommended that you review all chapter titles before focusing on one subject, because of the overlap between the different topics, in addition to the definitions and basic information on the screened diseases.

## » **Aim of the Manual**

- This manual provides recommendations for premarital medical screening strategies and methods used to prevent the transmission of hereditary diseases from parents to their children and infectious diseases between spouses. The manual recommends flowcharts to follow when providing services at the screening centers and the personnel required to provide those services.
- This manual is not considered a substitute for national or accredited guiding authorities in diagnosing and treating the hereditary and infectious diseases targeted by the screening program, but, rather, an easy-to-use and quick up-to-date tool that provides basic information about the premarital screening services.
- The manual also aims to guide persons planning to get married to the basic tests, provide them with simplified information on the diseases and the importance of the screening and consultation that will be provided to those benefitting from the service, and describes the referral system for cases in which abnormalities are detected during screening.
- Points out the roles of health and administrative staff at the screening centers in providing services.
- Describes the tools used for evaluation and follow-up in implementing the services at the center.

## » **Scientific and Ethical Justifications for the Screening of Hereditary and Infectious Diseases Included in Premarital Screening**

1. The rise in the prevalence of hereditary blood disorders (sickle cell anemia and thalassemia) in several regions in the Kingdom.
2. The excessive economic losses suffered by families and the community annually in patient treatment.
3. The grave losses in human resources and labor and production manpower, who are the cornerstone in the building and development of our nation.
4. Transmission of the HIV and hepatitis B and C viruses through the blood or body fluids of infected individuals.
5. Delayed appearance of symptoms in persons affected with the infectious diseases included in the screening.
6. In observance of children's right to be free of the diseases included in screening.
7. Screening married couples is effective in preventing spouses from being infected by communicable diseases.
8. Early detection of infectious diseases contributes to increasing the chances of treatment and prevention.
9. Helping the marriage to be successful and stable in health and psychological, social, and economic aspects.

## » **Vision, Mission, Values, and Aims**

### • **Vision:**

We envision healthy generations that are free from hereditary diseases transmitted from parents to their children, and the prevention of infectious diseases between spouses.

- **Mission:**

We aim to maintain the health of upcoming generations in the Kingdom of Saudi Arabia, while providing treatment to those affected and confronting the related health issues through implementation of the Healthy Marriage Program by a qualified team committed to high standards.

- **Values:**

1. Privacy and confidentiality.
2. Comprehensiveness.
3. Accuracy and credibility.

- **Aim:**

Effectively contributing to the building of families that are free from some of the most prevalent hereditary blood disorders in the Kingdom and the more serious infectious diseases, and raising health awareness among persons planning to get married.

- **Objectives:**

1. Limiting the spread of some of the hereditary and infectious blood diseases.
2. Decreasing disease and financial burden on families and the community.
3. Avoiding the psychological and social problems faced by families of affected children.
4. Spreading awareness on the concept of a healthy marriage.

# Section Two

## Diseases Included in Premarital Screening

## » Diseases Included in premarital screening

Premarital screening is an important social and medical issue, as it prevents, Allah willing, harm to the spouse or children. Screening can detect some of the hereditary and communicable diseases, which may cause one spouse dearly because of the marriage.

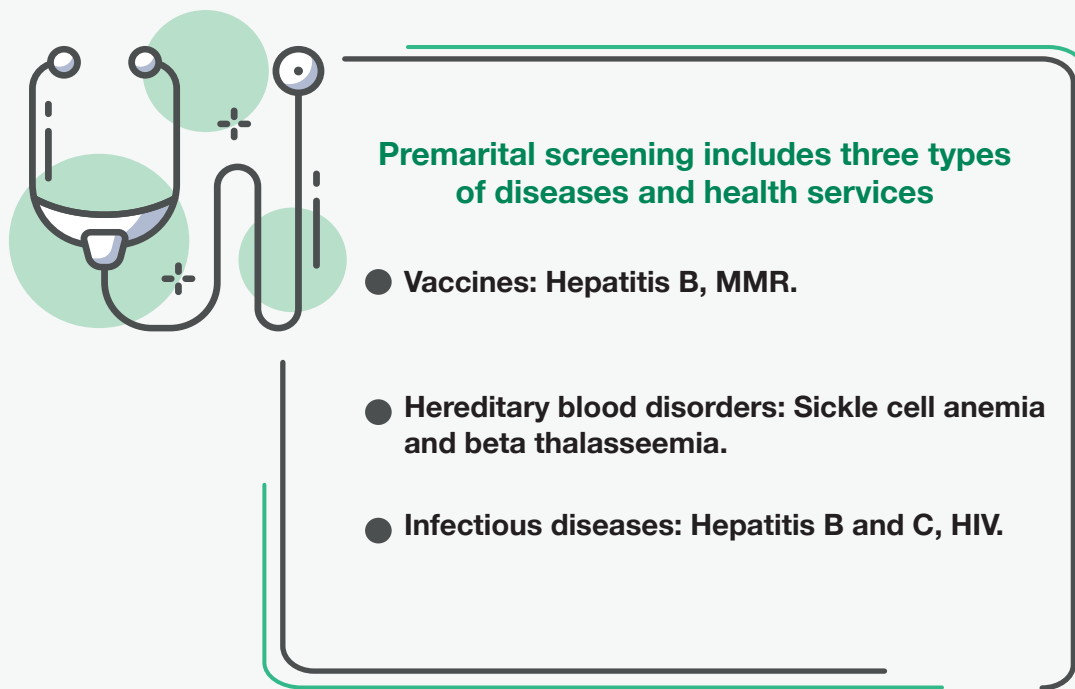


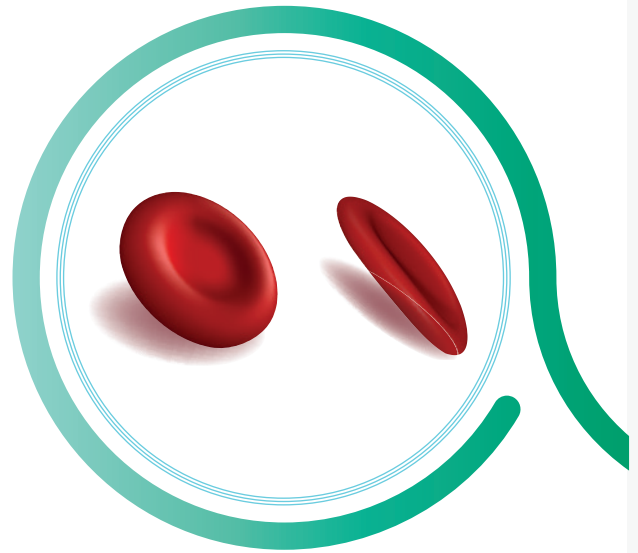
Figure 2: Diseases and services included in premarital screening

## » Hereditary Blood Disorders Included in Premarital Screening

Hereditary blood disorders are a group of blood disorders that are transmitted from parents to children. They result from a defect in the structure and components of red blood cells that makes them unable to function normally, leading to the emergence of symptoms in affected persons. The main types of hereditary blood disorders are **beta thalassemia and sickle cell disorders**. These disorders are transmitted from parents to children through genes located on chromosomes. If a genetic defect is present in both the mother and father, there is a risk that the child may be born with the disease. If, however, one parent was healthy and the other carried a defective gene, it is possible that the children will only be carriers for the disease trait and not suffer from symptoms.

## » Sickle Cell Anemia

Sickle cell anemia is a hereditary blood disorder where a defect occurs in the genes responsible for hemoglobin formation, causing red blood cells to get stuck in fine blood vessels. This diminishes the flow of blood and oxygen to the affected organ leading to appearance of the symptoms that accompany attacks in affected individuals such as severe pain, shortness of breath, and others. <sup>(2)</sup>



## » Symptoms

- Recurrent attacks of pain in different parts of the body depending on the area where red blood cell sickling and blockage of fine blood vessels occurs, such as pain in the abdomen or joints or one of the limbs.
- Chronic anemia.
- Recurrent infections.
- Symptoms of malnutrition, short stature, and decreased growth velocity.
- Bone deformities.
- Malaise and fatigue.

## » Complications

Resulting from blockage of capillaries and early red blood cell breakdown and death, complications **include:**

- Thrombus formation in the heart or brain.
- Frequent infections.
- Jaundice.
- Gallstone formation.
- Visual disturbance and loss of vision.
- Delayed growth in children.

## » **Treatment**

- The main aim of treatment in sickle cell anemia is to lessen the frequency of acute crisis episodes in the affected person in order to limit the development of complications, reduce pain, and improve the person's ability to live with the disease.
- People with sickle cell anemia need continuous care in order to lessen the frequency of complications and health deterioration.
- People with sickle cell anemia are given folic acid pills to help red blood cell production.
- During crisis episodes, pain is managed with analgesic medications and hydrating the patient's body.
- For pain management, some cases respond to over-the-counter analgesic medications, while others require stronger pain medications like morphine and meperidine and similar drugs administered in the hospital under medical supervision.
- Hydroxyurea is used in some cases as a preventive measure to prevent crises from happening, especially symptoms related to the respiratory system such as chest pain and shortness of breath.
- Routine vaccinations are a must, especially for children with the disease, in addition to annual seasonal vaccines such as influenza vaccine, to prevent infection.
- Patients may need to receive blood transfusions regularly and during acute crises.
- Eyes may be affected in persons with sickle cell anemia, and complications may occur leading to loss of vision; and so, regular follow-up and examination by an ophthalmologist is important.
- Bone marrow transplant can be considered for treatment in persons with sickle cell anemia.

## » **Thalassemia**

Thalassemia, or Mediterranean anemia, is a hereditary blood disorder that leads to diminished production of hemoglobin and red blood cell destruction. It is known as Mediterranean anemia because of its high prevalence in that region, and it results from a defect in the genetic make-up of hemoglobin. <sup>(3)</sup>

## » **Thalassemia Types and Symptoms**

The hemoglobin particle is made up of four protein chains: two alpha and two beta chains. In alpha thalassemia, fewer alpha chains are produced, and in beta thalassemia, fewer beta chains are produced.

### • **Alpha thalassemia**

There are four copies of genes that are responsible for the production of alpha chains. Each individual receives two from their mother and two from their father. Alpha thalassemia results from a mutation in those genes, and the severity of each case depends on the number of mutated genes and type of mutation. Persons affected with thalassemia do not develop overt symptoms if only one gene is mutated, a condition known as silent carrier. If the mutation involves two genes, a condition called alpha thalassemia minor results, which might not be evident but can be detected through blood tests. If three gene are mutated, a severe anemia develops with moderate to severe symptoms, a condition called Hemoglobin H disease. Blood tests from affected persons show small, deformed red blood cells, and these patients develop splenomegaly and bone deformities, because of their overactivity in order to replace the damaged red cells, and require blood transfusions to live a normal life. If all four genes are mutated, the condition is known as alpha thalassemia major, which is fatal, and causes fetal death before birth or death of the newborn after birth.

### • **Beta thalassemia**

There are two copies of the genes responsible for the production of beta chains, and each person receives one from their mother and one from their father. The disease has **two forms**:

- **Thalassemia minor:** results when the defect affects only one gene. Affected persons do not have obvious symptoms aside from mild anemia that shows up on routine blood tests.
- **Thalassemia major or thalassemia disease:** in this condition, both genes are defective, and affected persons suffer from severe anemia symptoms, bone deformities, and splenomegaly, and require regular blood transfusions in order to live a normal life. These symptoms are not present at birth, but begin to appear during the first two years of life.

## » **Complications**

Patients with thalassemia major and hemoglobin H disease develop many complications if not treated correctly and timely. Some of the complications include:

- Delayed development in children.
- Splenomegaly and abdominal distention.
- Bone deformities.
- Worsening anemia and constantly feeling fatigued and tired. <sup>(4)</sup>

## » **Treatment**

- Patients with thalassemia major and hemoglobin H disease need continuous regular care to prevent the many complications of thalassemia such as recurrent infections and health deterioration, which can lead to death if not appropriately managed.
- Affected persons require blood transfusion on a regular basis to raise the number of red blood cells in the blood and avoid anemia.
- Folic acid tablets are given to affected persons to help red blood cell production.
- Some persons with thalassemia may need to get rid of excess accumulated iron resulting from the continuous breakdown of red cells, which can be accomplished with the medication Desferal.
- Some persons with thalassemia major require splenectomy.
- Bone marrow transplant can be considered for patients who are diagnosed early before complications develop.

## » **Prevention of Hereditary Blood Disorders**

Adherence to premarital screening helps to limit transmission of hereditary blood disorders across generations, because blood tests would reveal the presence of defective genes in the woman or man who do not exhibit symptoms.

## » Risk Evaluation for Hereditary Blood Disorders in Children

- Safe marriage.
- Unsafe marriage.

### • Safe marriage

1. Both partners are unaffected: the percentage of having a child who is unaffected by these disorders is %100 for each pregnancy.
2. One spouse is a carrier for the disease and the other is unaffected: for each pregnancy, there is a %50 chance of having a child who is unaffected by any of these diseases, and %50 chance of having a child who is a carrier for the disease.
3. One spouse is affected by the disease and the other is unaffected: the chance of having a child who is a carrier for the disease is %100 for each pregnancy.

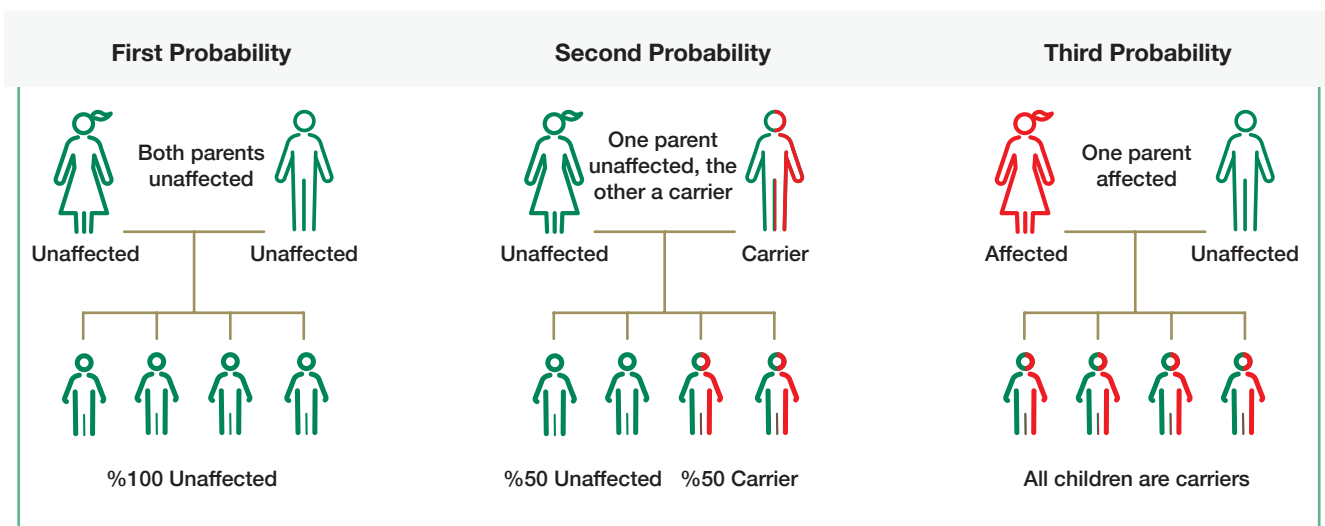


Figure 3: Safe Marriage

### Rule



Having one spouse who is unaffected by the hereditary blood disorders included in the program is the key to a **safe marriage** regardless of whether the other spouse was a carrier or affected by the disease.

## ● The Unsafe Marriage

1. Both spouses are carriers for the disease: each pregnancy carries a %25 chance of having an affected child, a %50 chance of having a child who is a carrier, and a %25 chance of having a child who is unaffected.
2. One spouse is affected by the disease and the other is a carrier: for each pregnancy, the risk of delivering an affected child is %50, and a child who is a carrier %50.
3. Both spouses are affected: the percentage of delivering an affected child is %100 for each pregnancy.

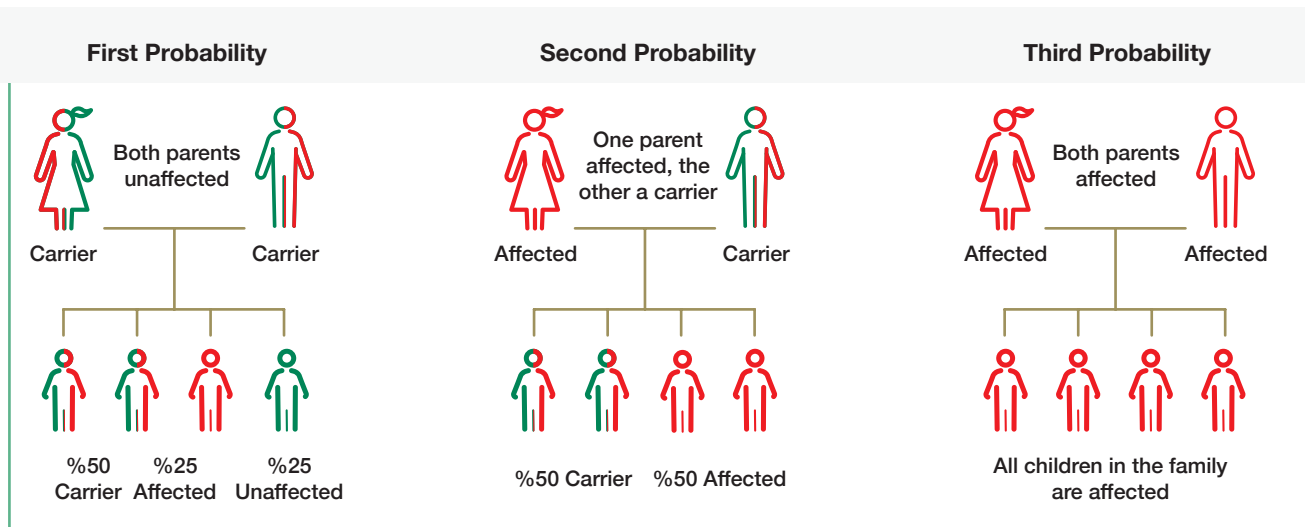


Figure 4: Unsafe Marriage

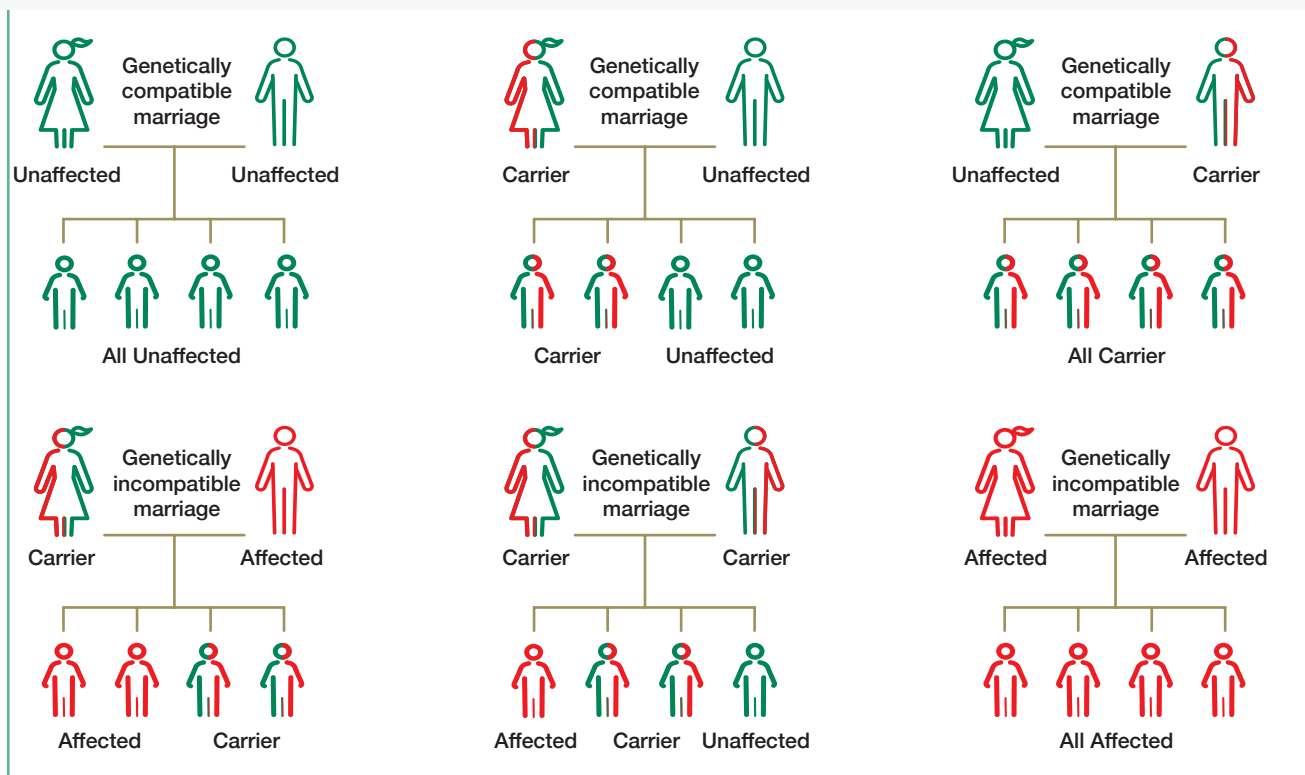


Figure 5: Risks of Thalassemia and Sickle Cell Anemia Transmission to Children

## » Laboratory Manual for Diagnosing Hemoglobinopathies

### • Hereditary blood disorders (sickle cell anemia and thalassemia)

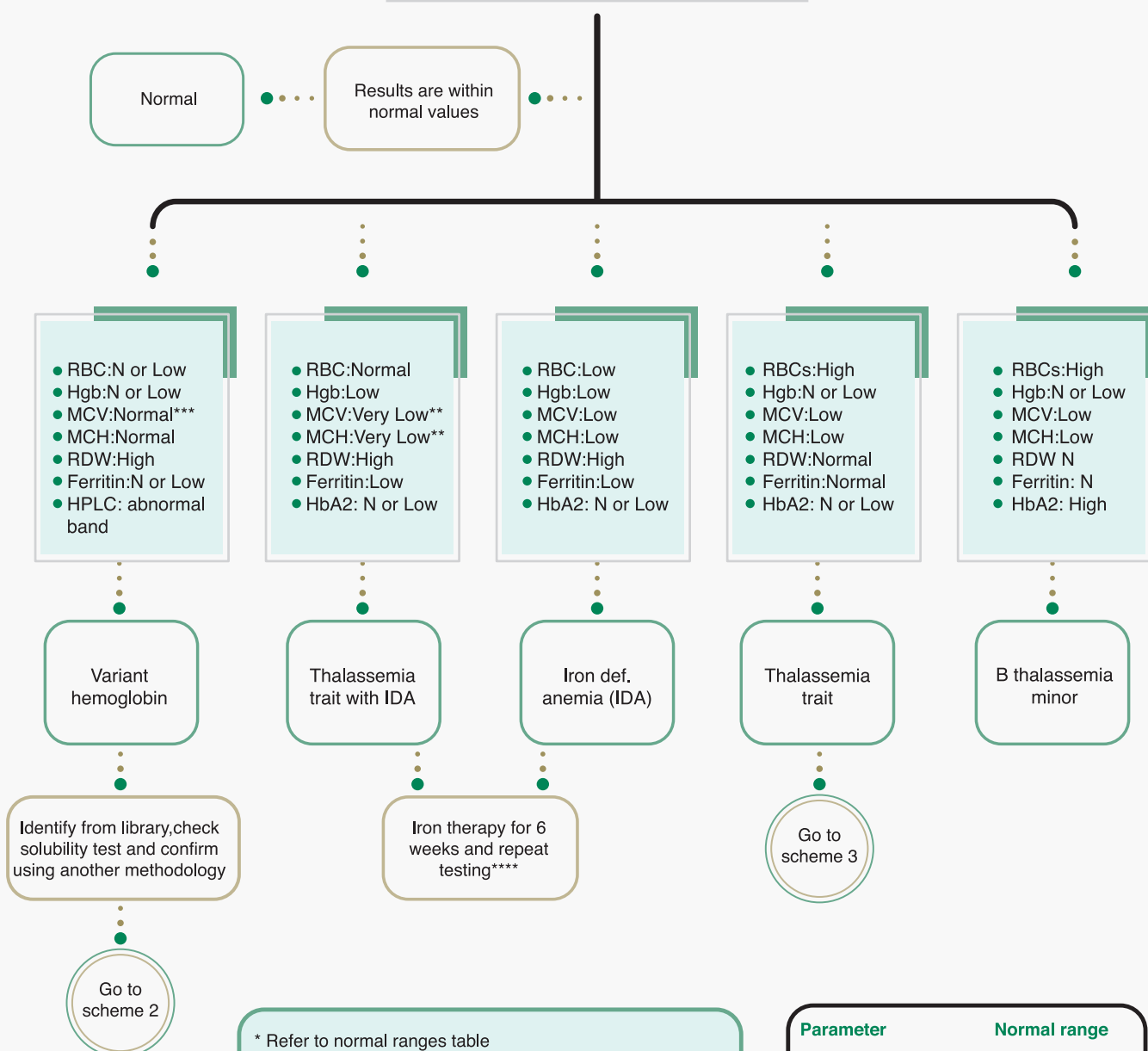
Disorders of hemoglobin production (such as thalassemia) and defective hemoglobins (in form and function) are common in the Kingdom of Saudi Arabia and represent a significant public health issue. Additionally, the importance of laboratory diagnosis of hereditary hemoglobinopathies is increasing, especially in view of the rising demand for diagnosis for premarital screening of couples planning to get married.

Distinguishing between the different types of hemoglobin can be done through various technologies that depend on differences between them in electrical charge or solubility. One of those technologies, such as the automated HPLC used in MOH laboratories, gives the best results for laboratories providing routine services compared with conventional technologies. It also has the ability to handle a large number of samples in a very short time. The following scheme discusses useful tests for diagnosing hereditary hemoglobinopathies and describes their roles in different clinical situations.

#### • Scheme 1: The Comprehensive Laboratory Manual for Diagnosing Hemoglobinopathies

1. One sample must be drawn using a tube containing EDTA from each partner to perform a CBC and HPLC, which is used for diagnosing globin chain synthesis defects (thalassemia) and structurally abnormal hemoglobins. Another sample should be drawn to test blood iron levels (ferritin) because of the high prevalence of iron deficiency anemia and its influence on test results. The results are interpreted as per **the following scheme:**

## CBC, Iron profile, HPLC



\* Refer to normal ranges table

\*\*In IDA, reduction of MCV and MCH levels correlate well with severity of anemia while in thalassemia trait, levels of MCV and MCH are disproportionately low to hemoglobin level. If IDA coexists with thalassemia trait, it leads to further reduction of MCV and MCH levels.

\*\*\* Hemoglobin E is thalassemic structural hemoglobin and usually presents with hypochromic microcytic picture.

\*\*\*\* Clinical decision should not be delayed if molecular test is negative or in case of latent IDA (borderline low hemoglobin level with low MCV and MCH) as this condition does not alter HbA 2 level. Moreover, mild IDA anemia (Hgb > 11g/dL and MCV > 73 fL) is less likely to lead to significant reduction of HbA 2 level.

Parameter	Normal range
RBC ( $10^{12}$ /L)	4.5-5.8 3.9-5.2
Hgb (g/dL)	13 (male) 12 (female)
MCV (fL)	78-94
MCH (pg)	27-32
RDW %	11-14
HbA 2 %	<3.5
Ferritin (mcg/L)	20-400

Table: Normal ranges for RBCs indices, HbA 2 and ferritin

Scheme 1: Diagnosing Hemoglobinopathies

2. Keep the following points in mind when reading the scheme:

**2.1** Refer to normal ranges set by the laboratory quality assurance department and compare results according to those values. Put an (N) in front of normal results, and the words (High) or (Low) in front of results that are high or low, respectively.

**2.2** When reading HPLC results, consider other values for a complete interpretation; the interpretation of one value apart from other results is considered incomplete. It is also essential to consider all technical issues related to the HPLC machine, including machine calibration and periodic quality testing as well as issues related to samples, and to be cautious of any abnormal hemoglobin from an earlier sample being transferred to the next sample (or carryover).

**2.3** The presence of hemoglobin S (HbS) in a sample of sickle cell anemia patients or carriers causes a technical increase in HbA2, as the denatured Hb S falls in the same location as HbA2 and, thus, it is important to be aware of this point, and that patients are not diagnosed with thalassemia accompanying sickle cell anemia unless they fulfill **the following:**

- **Alpha thalassemia carrier with sickle cell anemia:** shows low MCV and MCH values and lower levels of HbS than usual in persons who are carriers for sickle cell anemia alone (HbS < %32).
- **Beta thalassemia carrier with sickle cell anemia:** shows low MCV and MCH values and higher levels of Hb S than usual in persons who are carriers for sickle cell anemia alone (HbS > %50).

**2.4** It is important to note that being a carrier for an abnormal hemoglobin does not lead to a reduction in blood cell parameters except for HbE.

**2.5** Iron deficiency anemia can be diagnosed by the presence of reduced ferritin and hemoglobin levels accompanied by a parallel reduction in MCV and MCH values and increased RDW. This anemia usually leads to a reduction in HbA2 and, subsequently, affects the diagnosis of beta thalassemia minor. For this reason, it is essential to correct the anemia before finalizing diagnosis unless an accurate genetic test was available or the anemia was latent causing only a reduction in MCV and MCH values without lowering Hb. Studies have shown that iron deficiency anemia does not affect HbA2 level unless Hb is low.

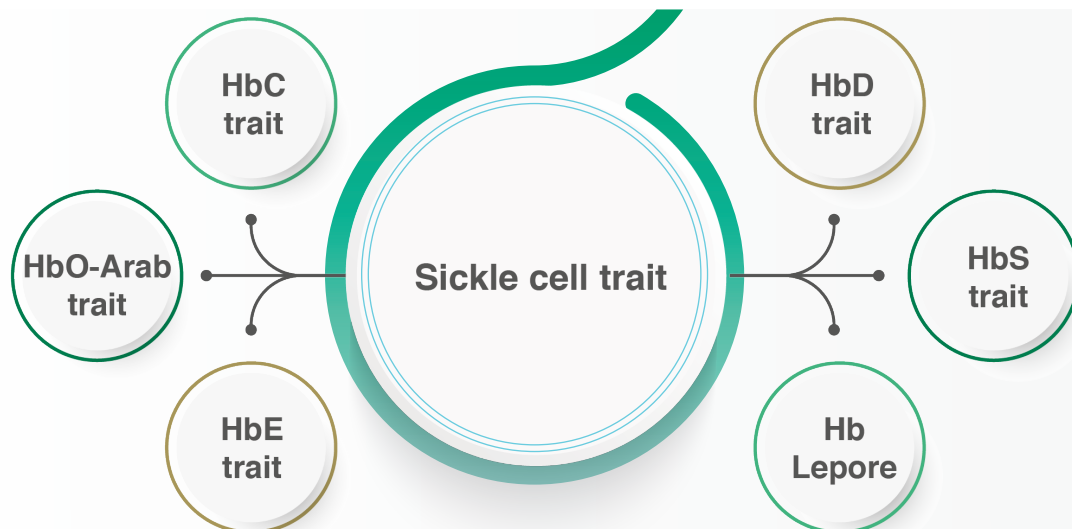
**2.6** When a state of thalassemia minor carrier is suspected based on blood cell parameters only with normal or reduced HbA2 and no other signs of anemia, differential diagnosis includes three possibilities:

- Alpha thalassemia.
- Delta beta thalassemia.
- Beta thalassemia with normal HbA2.

These possibilities and how they are managed are discussed in **Scheme 3**.

## • cheme 2: Sickel Cell Anemia Overlap with Hemoglobin Variants Carried on the Beta Gene

- When one partner is a carrier for sickle cell anemia, it is important to verify that the other partner is free from hereditary blood disorders related to the beta gene (B structural hemoglobin variants), specifically those mentioned in the figure below, as these diseases lead to blood cell destruction and the familiar sickling that causes them to appear very similar to sickle cell anemia, to the point that they are considered sickle-cell-disorder variants. These diseases include HbSS, HbS lepure, HbSE, HbSO-Arab, HbSD, and HbSC.
- And in the presence of other diseases not mentioned here, it is pertinent to ascertain their possible effects on children before providing counseling.



Scheme 2: Sickel Cell Anemia Overlap with Hemoglobin Variants

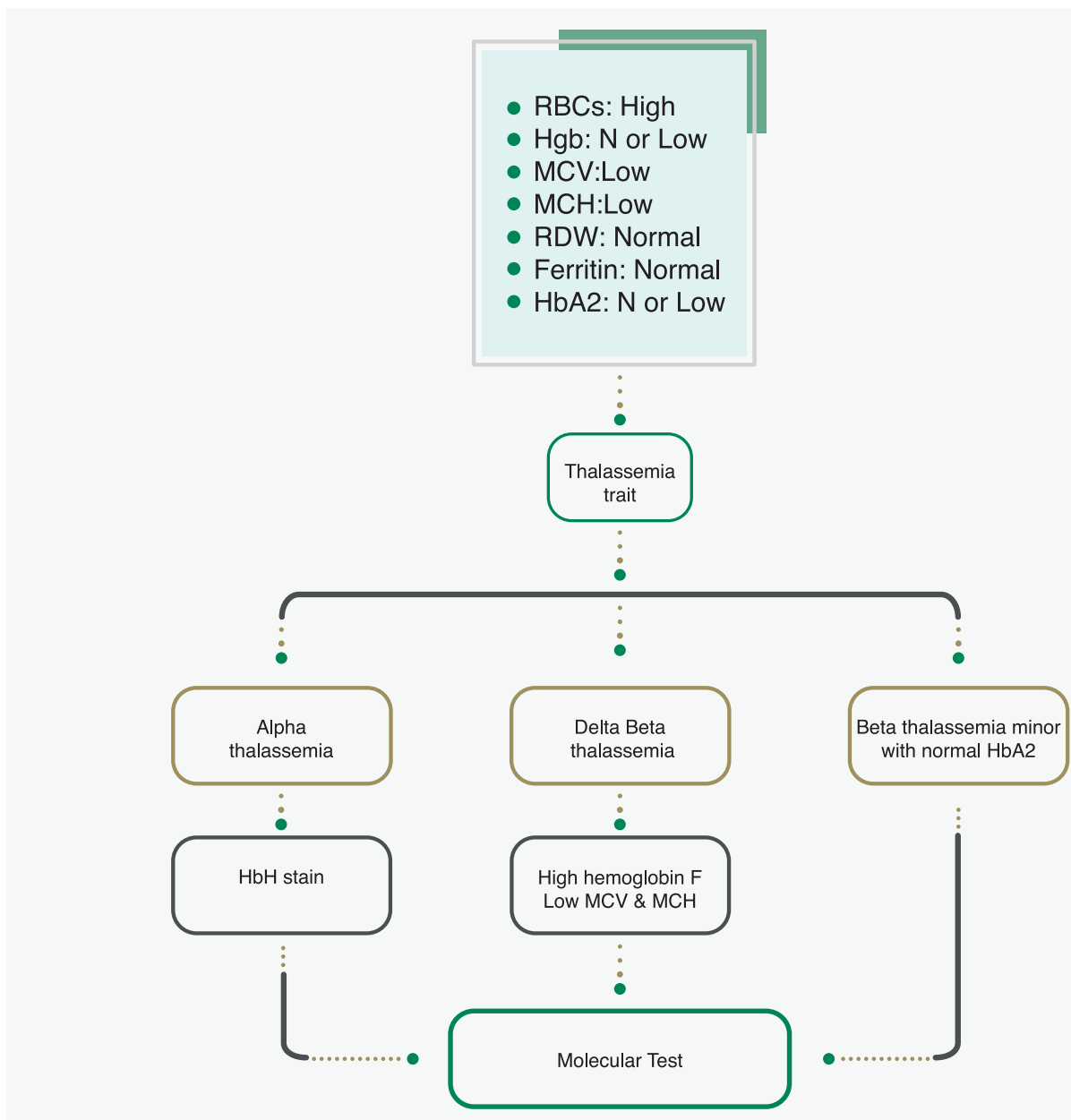
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### ● cheme 3: Diagnosing Thalassemia Carrier State with Low or Normal Hemoglobin A2 Levels

When thalassemia minor carrier state is suspected based on blood cell parameters only with normal or reduced HbA2 levels and no other signs of iron deficiency anemia, differential diagnosis **includes three possibilities:**

- 1. Alpha thalassemia:** This is the most common cause, where genetic mutations lead to deletion of one, or even two or three, of the alpha genes. It can be detected using stains for HbH or finding HbH in HPLC analysis, and the most accurate test for this genetic defect is molecular testing.
- 2. Delta beta thalassemia:** This is caused by widespread mutations causing deletion of the delta and beta genes with preservation of the gamma gene. In persons who are carriers for the disorder, the level of HbF increases, a state known as deletion type HPFH. In those who are affected, however, HbF represents their only hemoglobin type (HbF = %100).
- 3. Beta thalassemia with normal HbA2 levels:** Rare mutations of unknown cause lead to diminished HbA2 levels, in most cases due to accompanying alpha thalassemia.

In cases where one partner is a carrier for beta thalassemia minor and the other is suspected of being a thalassemia carrier with normal HbA2 levels, molecular genetic testing is indicated to reach an accurate diagnosis before making the final decision.



Scheme 3: Diagnosing Thalassemia Carrier State with Low or Normal Hemoglobin A2 Levels

### » Reasons for Blood Sample Rejection by the Laboratory

- More than seven days have passed from sample extraction.
- Sample was kept at an unsuitable temperature.
- Sample is hemolyzed.
- Incomplete or unclear sample barcode.
- Sample amount is small or insufficient for the amount of anticoagulant in the tube.

**Important  
Note:**



Follow **diagnostic standards approved** by the Laboratories and Blood Banks General Department, and any questionable results or laboratory values should be reviewed by laboratory specialists in the same region to make the appropriate decision.

» **Infectious Diseases Included in Premarital Screening**

- **Infectious Diseases:** A group of viral diseases that are transmitted in various ways, for example through body fluids or sexual contact, from an affected person to one who is unaffected. Some of these diseases are incurable and may cause serious complications or lead to an early death.
- **Viruses Causing the Infectious Diseases Included in Screening**

○ **Hepatitis B virus**

- **Disease description:**

**Hepatitis B virus** causes hepatitis B, an infectious disease affecting the liver. The clinical picture depends on the age of the person affected, where, in general, affected person rarely has symptoms, however the percentage of persons who are symptomatic is **%50-30** in older children and adults.

**Hepatitis B symptoms include loss of appetite**, vague abdominal pain, nausea, vomiting, arthralgia, skin rash, and patients usually develop jaundice (yellow discoloration of the skin and conjunctiva). Fever may be absent or only slight. Disease severity varies from mild, detected only by liver function tests, to fatal cases due to acute hepatic necrosis (liver cell death).

- **Significance of the disease**

The significance of hepatitis B lies in the fact that it is the cause of **%80** of liver cancer cases, and **%15 to %25** of affected persons suffer an early death due to liver cirrhosis or progression to liver cancer.

### - Modes of transmission

Hepatitis B is transmitted through blood (and plasma products) as well as vaginal secretions, semen, and saliva of infected persons. Accordingly, infection can be transmitted by any of the following ways:

- Unprotected sexual contact.
- From infected mother to her newborn around the time of delivery.
- Sharing needles and injections (especially between drug addicts).
- Sharing razor blades and tooth brushes.

### - Who is susceptible?

Any person who does not have immunity to the hepatitis B virus is susceptible to infection. This includes persons who have never been infected with the virus, those who have not completed the hepatitis B vaccination schedule, persons who have not yet produced antibodies or active immunity to the virus, and newborn infants of mothers infected with hepatitis B virus.

### - Diagnosis

Hepatitis B infection is confirmed by laboratory tests.

### - Treatment

There is no treatment for acute hepatitis B. In addition, medications taken by persons with chronic hepatitis B are not curative in most cases but rather inhibit viral replication, and for this reason most patients continue to take these medications for life under medical supervision.

### - Program Objectives

Confirmation of diagnosis by laboratory testing to know whether the person is susceptible or uninfected with hepatitis B virus. This is done by testing blood samples from both partners planning to get married and then **following the procedures below:**

- Referral of persons infected with hepatitis B virus to specialists to have medical records set up for them for periodic follow-up.
- Providing preventive measures for persons who do not have immunity to hepatitis B virus but plan to go ahead and finalize their marriage to an infected partner. This is accomplished by taking one or two doses, at minimum, of the hepatitis B vaccine at least one-month apart in order to raise protective immunity to the virus and its risks, on the condition that he or she will take the third dose after six months from the first. It is recommended that all three doses are completed before the wedding. <sup>(6)</sup>

## - **Measures that can be taken in cases of marriage between a person who is hepatitis B positive and an unaffected partner**

1. Measure hepatitis B antibodies (HBsAb) for the unaffected partner to decide the appropriate measures that need to be taken.
2. If the result is non-reactive, meaning less than 10 units (anti-HBs  $\leq$  10 IU/L), the person does not have enough immunity and, consequently, should be given two doses one-month apart on the condition that he or she will take a third dose after six months from the first dose.
3. If the result is between 10 and 100 units (anti-HBs 100-10 IU/L), the person has moderate immunity and, consequently, should be given one dose.
4. If the result is over 100 units, the person has immunity and no additional measures are required.

## ○ **Hepatitis C virus**

### - **Disease description**

This virus causes hepatitis C, an infectious disease gradually affecting the liver. The infection causes no or only mild symptoms at first in %90 of cases.

Symptoms of hepatitis C include loss of appetite, vague abdominal pain, nausea, vomiting, and arthralgia. Infection develops into chronic disease in %85-55 of cases.

### - **Significance of the disease**

The significance of hepatitis C lies in its progression to cirrhosis or cancer of the liver in approximately %30-15 of chronic cases.

### - **Modes of transmission:**

Hepatitis C virus is transmitted through contact with infected blood and blood products, and is most commonly transmitted through intravenous drug use, blood transfusion, organ transplantation, from infected mother to child, and through unprotected sexual contact. <sup>(7)</sup>

### - **Who is susceptible?**

Anyone who has never been infected with hepatitis C virus is susceptible to infection, including newborn infants born to infected mothers.

### - **Diagnosis**

Hepatitis C infection is confirmed by laboratory tests.

## - Treatment

Hepatitis C is managed with one of the newer, more effective medication regimens with fewer side effects provided by the MOH. Recovery rate is over %95 with treatment for 8 to 24 weeks depending on the regimen, which is chosen according to the genetic make-up of the virus, degree of liver cirrhosis, and patient's renal function.

## - Program Objectives

Confirmation of diagnosis by laboratory testing to know whether or not the person is infected with hepatitis C virus using PCR testing of blood samples from both partners planning to get married, and **following the listed procedures:**

- Referral of persons infected with hepatitis C virus to specialists for appropriate treatment, and confirmation of recovery after PCR is negative. In addition to curing the person infected with hepatitis C and its risks, the program aims to protect the partner susceptible to infection with hepatitis C, which has no vaccine or antibody therapy, when he or she decides to go ahead with the marriage to the infected partner.<sup>(8)</sup>
- If the PCR test is positive, the person is provided with the required medical counseling and referred for treatment at treatment centers. The certificate is issued after completion of treatment, provided that the PCR test result is negative post treatment. There is no need to inform the unaffected partner unless the affected partner gives consent.
- If the PCR test is negative, the person is considered unaffected and is not called in for medical counseling. Furthermore, the unaffected partner is not informed of the result, and a certificate of compatibility is issued.

## ○ Human Immunodeficiency Virus (HIV/AIDS)

### - Disease Description

**HIV causes AIDS**, an infectious disease affecting the immune system in three stages. Several weeks to months after infection, an acute illness appears lasting one to two weeks then spontaneously subsides. Symptoms may not be present after the acute phase for a prolonged period, from several months to years, then after the prolonged asymptomatic phase, the clinical picture characteristic of AIDS appears including opportunistic infections and systemic and neurologic symptoms depending on the severity of the immune system defect. This phase begins gradually with nonspecific symptoms Like lymphadenopathy, decreased appetite, chronic diarrhea, weight loss, fever, and fatigue.

### - **Significance of the Disease**

Acquired immunodeficiency syndrome represents the late stage of HIV infection, which causes progressive damage to the immune system and other body systems including the central nervous system in addition to opportunistic infections.

### - **Modes of Transmission**

HIV is transmitted from infected individuals through blood (and blood products) and sexual intercourse, especially when other sexually transmitted infections are present, particularly ulcers which greatly facilitate spread of the virus. In addition, the virus can spread from an infected mother to her newborn child during pregnancy through the placenta or after delivery through breastfeeding. Although the virus has been detected in many cases in saliva, bronchial secretions, tears, and sweat, transmission through these secretions has not been documented.

### - **Who is Susceptible?**

Any person who has never been infected with HIV is susceptible including newborns of infected mothers, where 35-15 are infected at birth. In addition, breastfeeding can cause up to half of the cases of transmission from mother to child. Presence of other sexually transmitted diseases in the susceptible person, especially those causing ulceration, may increase susceptibility to infection; this includes non-circumcised males.

### - **Treatment**

There is no cure for AIDS, and medications taken by persons with HIV infection are not curative in most cases, but rather inhibit viral replication and limit spread. For this reason, patients continue to take these medications for life under medical supervision.

### - **Program Objectives**

Confirmation of diagnosis by laboratory testing to know whether or not the person is infected with HIV by testing blood samples from both partners planning on getting married and then **following the appropriate procedures listed:**

- If the result is positive: referral of only the persons infected with HIV to receive the required counseling in coordination with the regional AIDS prevention department, preferably in the presence of the coordinator. They are also referred to the AIDS prevention clinic in the region to have medical records set up for follow-up.

In addition to providing the required counseling to the affected partner on HIV and its risks, the program also aims to prevent the susceptible partner from infection with HIV, which has no vaccine or curative treatment, in cases where the person decides to go ahead with the marriage to the affected partner.

- The consultation physician issues a certificate of compatibility if both partners have AIDS, on the condition that they will commit to following treatment for life.

## ○ Measles/Rubella Virus

### A. Measles Virus

#### - Disease Description

This virus causes measles, an acute infectious disease that begins with fever, conjunctivitis, flu, cough, and white spots on the mucous membrane in the mouth followed by appearance of the patchy red rash characteristic of measles on the seventh day after symptoms begin. The rash begins on the face then becomes generalized and lasts from four to seven days.

#### - Significance of the Disease

Measles is more serious in newborns and adults than children, and may cause health complications that include encephalitis, otitis media, laryngitis, bronchitis, pneumonia, and diarrhea.

#### - Who is Susceptible?

Any person who has no prior immunity to the measles virus including those who have never had the disease, persons who did not receive the measles vaccine or did not complete the dosing schedule, and infants born to mothers who have no active immunity to measles.

#### - Modes of Transmission

Measles virus is transmitted from infected persons through air or direct contact with throat or nasal secretions of infected individuals. Infants with congenital rubella syndrome may spread large quantities of the virus to contacts for several months after birth through pharyngeal secretions or urine.

#### - Diagnosis

Measles is diagnosed preliminarily on clinical, epidemiological bases and lab test for suspected cases.

#### - Treatment

There is no treatment.

## **B. German Measles (Rubella)**

### **- Disease Description**

Rubella virus causes German measles, an infectious disease accompanied by slight fever and

a generalized maculopapular rash apparent in 80-50% of patients. This can be preceded in adults by a prodromal stage lasting one to five days with mild fever, headache, malaise, flu, and there may be congestion of the conjunctiva. Enlargement of the posterior auricular, cervical, and suboccipital lymph nodes is pathognomonic for rubella, and there may be generalized lymphadenopathy or joint inflammation in up to 70% of women. There may be few or no general symptoms in children.

### **- Significance of the Disease:**

The significance of rubella lies in its ability to cause congenital fetal defects during pregnancy, where congenital rubella syndrome affects 90% of infants born to women infected with the virus in the first trimester, whereas defects decrease to 20% when infection occurs during the sixteenth week and are rare when infection occurs after twenty weeks of pregnancy. Fetuses infected early in pregnancy are the most susceptible to intrauterine fetal death, spontaneous miscarriage, and congenital defects to main organs and systems such as microcephaly, meningitis, encephalitis, mental retardation, deafness, microphthalmia, hepato-splenomegaly, or jaundice.

### **- Who is Susceptible?**

Anyone who does not have immunity to rubella including persons who have never had German measles, those who have never received the rubella vaccine, and infants of mothers who do not have immunity to the virus.

### **- Modes of Transmission**

The rubella virus is transmitted from infected individuals through respiratory droplets or direct contact with infected persons or their nasopharyngeal secretions. Infants with congenital rubella syndrome may spread large quantities of the virus to their contacts for several months after birth through pharyngeal secretions or urine.

### **- Diagnosis**

Diagnosing rubella clinically is inaccurate and diagnosis should be made based on laboratory tests.

### **- Treatment**

There is no treatment.

### - **Program Objectives**

Protecting childbearing women who are planning to get married from the disease with the MMR vaccine, provided that they do not have medical contraindications to receiving the vaccine and that they avoid becoming pregnant for at least one month after vaccination. This will provide immunity for the women and their infants from measles/rubella and fetal rubella syndrome and their complications which have no treatment. Women planning to get married must sign an agreement to take the MMR vaccine and avoid pregnancy for one month, and those refusing the vaccine must sign a statement of refusal to take the vaccine after receiving proper counseling.

### - **Contraindications to the Measles/Rubella vaccine**

1. Live vaccines should not be given to persons with an immunodeficiency disease or immunosuppression (resulting from leukemia, lymphoma, or other malignancies) or who are receiving corticosteroids or treatment with radiation or alkaline antimetabolite medications. The vaccine can be given to persons with HIV infection after informing their treating physician.
2. Live vaccines should not be given to pregnant women and, consequently, any woman who is pregnant or may be pregnant should postpone receiving the MMR vaccine until after delivery.
3. Any live vaccines should be postponed in persons experiencing a severe illness with or without fever until the acute phase subsides. However, experiencing a mild illness such as diarrhea or upper respiratory infection is not considered a contraindication.
4. Persons who had previously experienced a life-threatening hypersensitivity reaction after receiving a dose of the MMR vaccine or have severe hypersensitivity to the vaccine's contents.
5. If the person had recently received.

## » Procedure for Administering the MMR Vaccine at Premarital Medical Evaluation Centers

- Provide health education about the importance and benefits of vaccination.
- Confirm the absence of contraindications to administering the vaccine.
- Emphasize avoiding pregnancy for at least 28 days after receiving the vaccine.
- Signing the agreement to take the MMR vaccine and avoid pregnancy for at least 28 days after receiving it.
- If a woman planning to get married refuses the vaccine, she must sign the statement of refusal
- Enter the data of the woman planning to get married into the electronic system as per MOH instructions.
- Follow-up of premarital screening procedures.

### Important

#### Note:



- One dose of the vaccine is administered at the premarital screening center before drawing the blood samples, and the patient is instructed to take the second dose (after one month) at one of the primary health care centers.
- In the event the woman planning to get married refuses to take the measles vaccine but completes all premarital screening procedures then returns to receive the vaccine, she is referred to one of the primary health care centers to receive the vaccine there.
- Receipt of screening results is not a requirement to receive the vaccine.
- The vaccine is considered safe for all age groups from six-month-old infants onwards, and it can, thus, be given to women planning to get married regardless of their age.
- IgM testing is not required prior to administration of the vaccine.
- The MMR vaccine has no interaction with the COVID19- vaccine, provided that they are taken at least 14 days apart.

## » Screening for Infectious Diseases

### - Laboratory Manual for Hepatitis B Screening

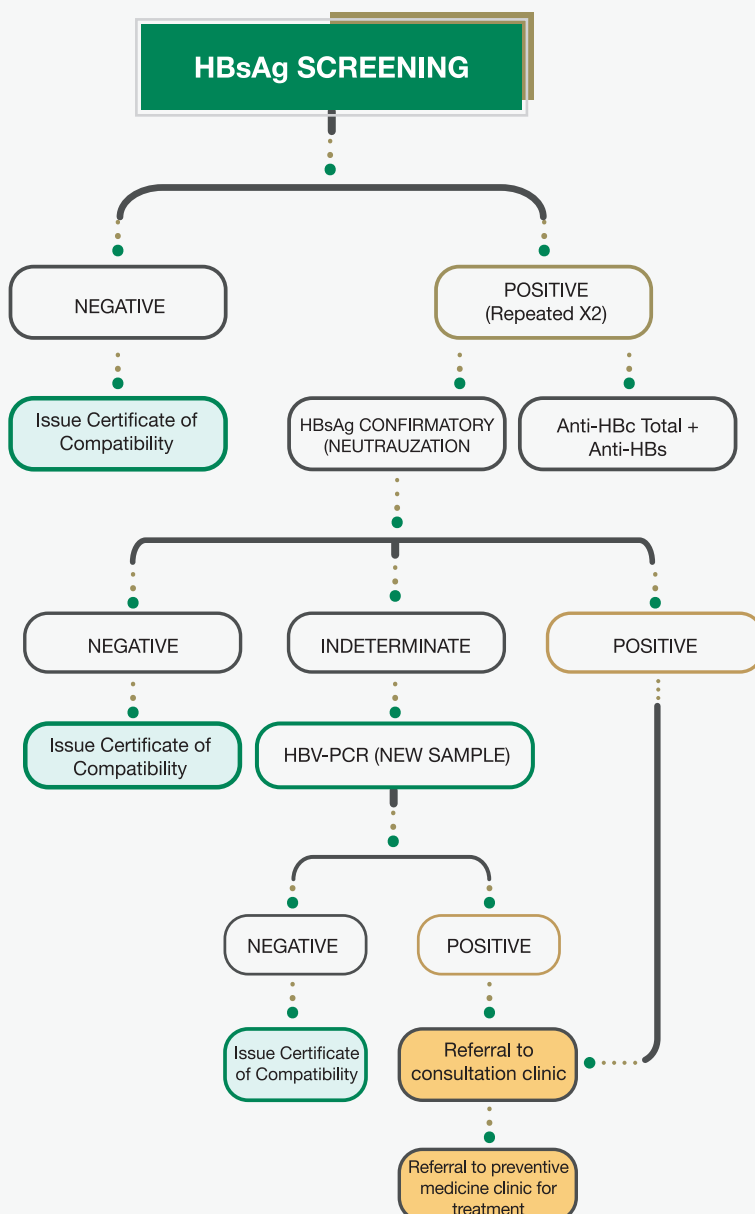
1. Hepatitis B is screened through the hepatitis B antigen (HBsAg).
2. If the result is positive, the hepatitis B confirmation test is performed (HBsAg neutralization). In addition, it is recommended to measure antibody levels (Anti-HBs Ab G and total anti-HBc).
3. If the HBsAg neutralization confirmation test is positive, the person is considered affected and is given the required medical counseling and referred to treatment centers for treatment.
4. If the result of the confirmation test is equivocal, a second confirmation test is performed using virus-specific tests (HBV PCR).
5. Result confirmation using the HBV-PCR test:
  - If the HBV-PCR test is negative: the person is considered unaffected and is not called in for medical counseling. Also, the unaffected partner is not informed, and a certificate of compatibility is issued.
  - If the HBV-PCR test is positive, the required medical counseling is provided and the person is referred for treatment at treatment centers. The certificate is issued after completion of treatment, provided that the PCR test result is negative. The unaffected partner is not informed of the result unless the affected partner gives consent.

#### **If the HBsAg test is positive for one partner, follow the procedures below:**

1. Perform Anti-HBs screening for the unaffected partner to measure antibody levels. If the result is positive, continue the remaining procedures and refer the affected partner to the preventive medicine clinic with a referral from the medical consultation clinic to have a medical record set up for periodic follow-up.
2. The unaffected partner is referred in order to receive the vaccine according to Form 4, and the screening certificate is not issued until after he or she receives the second dose and signs the undertaking to complete the third dose.

## » Measures that Can be Taken in Cases of Marriage Between a Person who is Hepatitis B Positive and an Unaffected Partner

1. Measure hepatitis B antibodies (HBsAb) for the unaffected partner to decide the appropriate measures that need to be taken.
2. If the result is non-reactive, meaning less than 10 units (anti-HBs  $\leq$  10 mIU/mL), the person does not have enough immunity and, consequently, should be given two doses one-month apart on the condition that he or she will take a third dose after six months from the first dose.
3. If the result is between 10 and 100 units (anti-HBs 100-10 IU/L), the person has moderate immunity and, consequently, should be given one dose.
4. If the result is over 100 units, the person has immunity and no additional measures are required.



### If the result is positive for both partners:

1. Both partners are referred to the preventive medicine clinic with a referral from the medical consultation clinic in order to have medical records set up for periodic follow-up.
2. The required medical counseling is given to both partners and they are issued a certificate of compatibility.

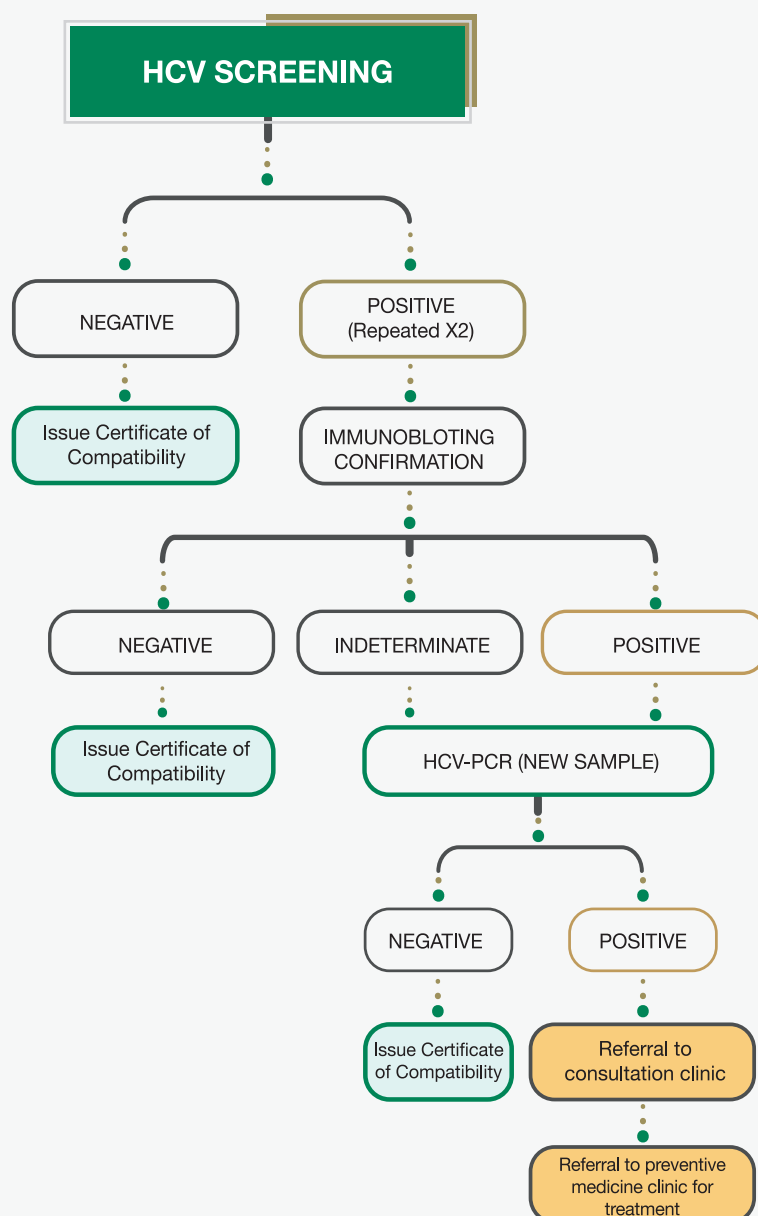
Scheme 4: Laboratory Diagnosis of Hepatitis B Virus

## - laboratory Manual for Hepatitis C Screening

1. Preliminary screening is done through hepatitis C antibody testing (Anti-HCV).
2. If the result is positive, a confirmatory immunoblotting test is performed (Line Immune Assay, LIA).
3. If the result is positive or equivocal, the second confirmatory test is done using virus-specific testing (HCV-PCR).
4. Results are confirmed with HCV-PCR testing:

- **If the HCV-PCR test is negative:** the person is considered unaffected and is not called in for medical counseling. The unaffected partner is not informed of the result and a certificate of compatibility is issued.

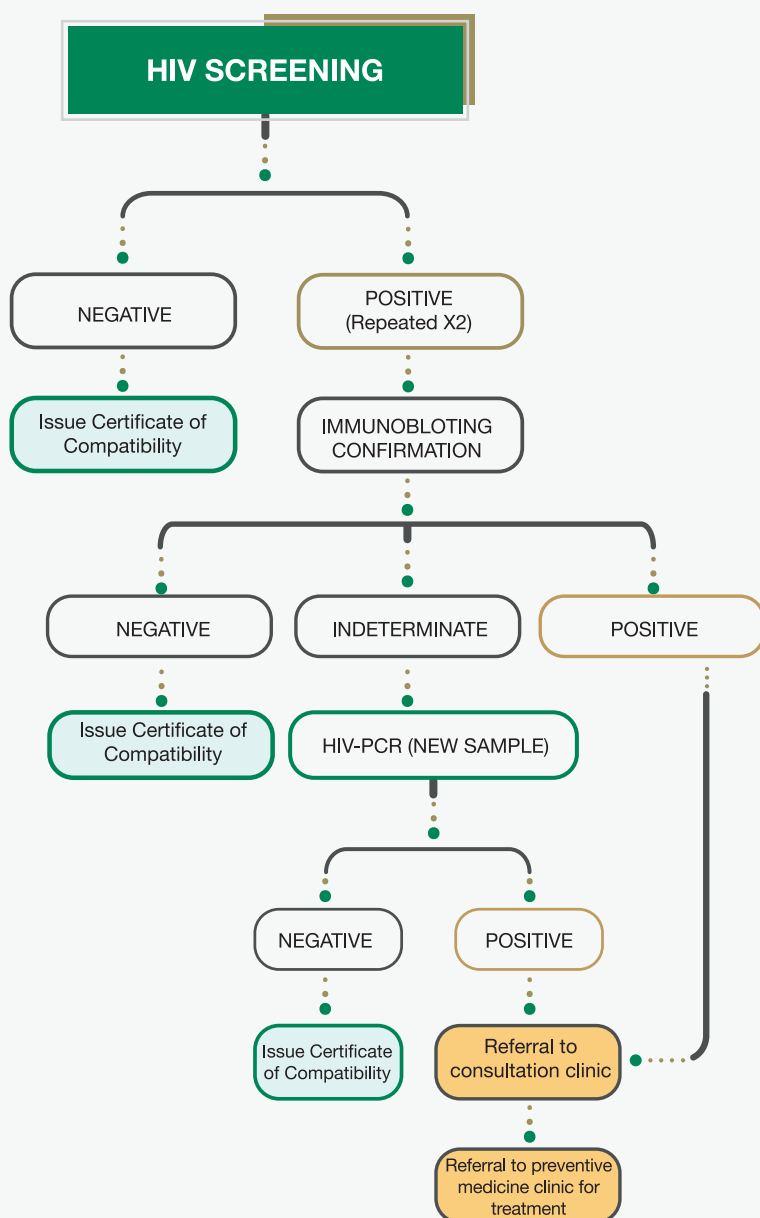
- **If the HCV-PCR test is positive,** the person is provided with the required medical counseling and referred for treatment at treatment centers. The certificate is issued after completion of treatment, provided that the HCV-PCR test is negative. The unaffected partner is not informed of the result unless the affected partner gives consent.



Scheme 5: Laboratory Diagnosis of Hepatitis C Virus

## - Laboratory Manual for HIV Screening

1. Preliminary screening is done using fourth generation Anti-HIV Ag/Ab testing.
2. If the result is positive, a confirmatory immunoblotting test is performed (Line Immune Assay, LIA).
3. If the confirmatory test is positive, required counseling is given for diagnosing the affected person only, in coordination with the AIDS prevention department in the region, and preferably in the presence of the coordinator; and the patient is referred to the AIDS prevention department in the region.
4. If the confirmatory test is equivocal, the second confirmation test is performed using the virus-specific HIV-PCR test.
5. Results are confirmed with HIV-PCR testing:



- **If the HIV-PCR test is negative**, the person is considered unaffected and is not called in for medical counseling. The unaffected partner is not informed of the result, and a certificate of compatibility is issued.
- **If the HIV-PCR test is positive**, required counseling is given for diagnosing the affected person only, in coordination with the AIDS prevention department in the region, preferably in the presence of the coordinator; and the patient is referred to the AIDS prevention department in the region.
- The certificate of compatibility is issued by the consultation physician if both partners are affected by HIV/ AIDS, on the condition that they commit to following treatment for life.
- If one partner is affected and the other is unaffected, cases of marriage between an affected person and one who is unaffected are referred to the central committee for case evaluation if they fulfil the required conditions, with coordination with the AIDS prevention program administration.

Scheme 6: Laboratory Diagnosis of HIV

# Section Three

**Operation Guidelines**

## » Principles of Privacy and Confidentiality

Laboratory screening, in itself, is not the only source of stress in the testing process. Other people's knowledge of the results plays a major role in why persons planning to get married fear being tested, because of the psychological and social problems it causes them.

### To Ensure Privacy and Confidentiality, observe the Following:

- Codes are used in place of names.
- The availability of an electronic sign-up system, confidential documentation, and allowing only authorized personnel to access data.
- Viewing the partner's results is prohibited if he or she decides not to go ahead with the marriage.
- Staff at the centers are required to maintain confidentiality and are held fully accountable for it.
- Constant reviewing of confidentiality measures and updating them when needed.

### - Principles of Education and Premarital Screening:

- **Verification:** Verifying the identity of the person being tested by national ID and electronic print (if available).
  1. Results are given to the tested individual in person.
  2. Follow appropriate procedures for delivering bad news.
  3. Explain the nature of the disease, its risk factors, and modes of transmission.
- **Discussion:**
  1. Find out the fears and concerns of the person being screened.
  2. Confirm that the affected person is at present infected with the virus but not necessarily in the advanced stages of the disease.
  3. Inform the screened individual of the measures for prevention and lowering infection risk.
- **Referral:** In case of one partner being infected, both screened partners are referred as follows:
  1. The person with the positive result is referred to the treatment services department to receive appropriate treatment.
  2. The person with the negative result is referred to the department of preventive services with the referral form to receive required vaccines.



Figure 6: Principles of Education and Premarital Screening

## » Principles for Delivering Premarital Screening Results and Screening Certificates

- **Principles for Relaying Positive Results to Patients:**

- **Preparing in advance**

- Maintaining privacy.
- Reviewing and verifying medical information for each case.

- **Preparing for medical consultation**

- Knowing what the screened individual wants.
- Arranging for the presence of a family member or other supportive persons when needed.
- Introducing oneself.
- Preparing the screened person to receive the bad news.
- Referral to the specialized clinic.

- **Establishing a good communication relationship**

- Being honest.
- Remaining calm and avoiding the use of medical jargon.
- Giving the screened individual the chance to describe his or her condition and express concerns.
- Giving the screened individual enough time to answer questions directed to him or her, and documenting important points.
- Ending the visit with a summary and preparation of a referral plan.

- **Managing reactions of the screened individuals and their family**

- Responding to emotional reactions from the screened individuals and their families
- Showing humanitarian emotions while interacting with the screened individual.

- **Encouraging and reinforcing positive emotions**

- Explaining what the test results mean to the screened individual.
- Speaking of realistic hopes relevant to the person's interests.
- Use of a variety of resources.

## » Screening Certificates

The screening certificate is considered an official document that certifies that the persons mentioned have undergone the laboratory tests included in the program, and is one of the main documents required for finalizing a marriage contract without which marriage officials (or ma'zoun) cannot complete a contract.

### » The Medical Consultation Clinic

- The medical consultation clinic issues a **certificate of incompatibility** if both marriage parties are affected or carriers or if one is affected and the other is a carrier for any of the hereditary blood disorders included in the program, after providing medical counseling and attendance of the education program in cases of complete incompatibility.
- The medical consultation clinic issues a **certificate of compatibility** if one partner is unaffected regardless of whether the other partner is a carrier or affected by any of the blood disorders included in the program.
- The medical consultation clinic issues a **certificate of compatibility** if both marriage partners are affected by hepatitis B virus or if one is affected and the other, susceptible, partner presents medical proof of immunity; in addition to referral of the affected parties to the hepatitis treatment clinic.
- Methods of proving **immunity to hepatitis B:**
  1. Documentation of having received two doses at least of the hepatitis B vaccine, as the vaccine schedule after completion provides active immunity in %95 or more of people, depending on the person's state of health and age at the time of vaccination in addition to the number and concentration of doses received.
  2. Laboratory diagnosis of immunity to hepatitis B virus (presence of antibodies to the viral surface antigen, Anti-HBs, in the patient's plasma at a level of 10 IU/L or higher).
- The medical consultation clinic issues a **certificate of compatibility** if one partner, or both, is affected by hepatitis C virus after taking the following steps:

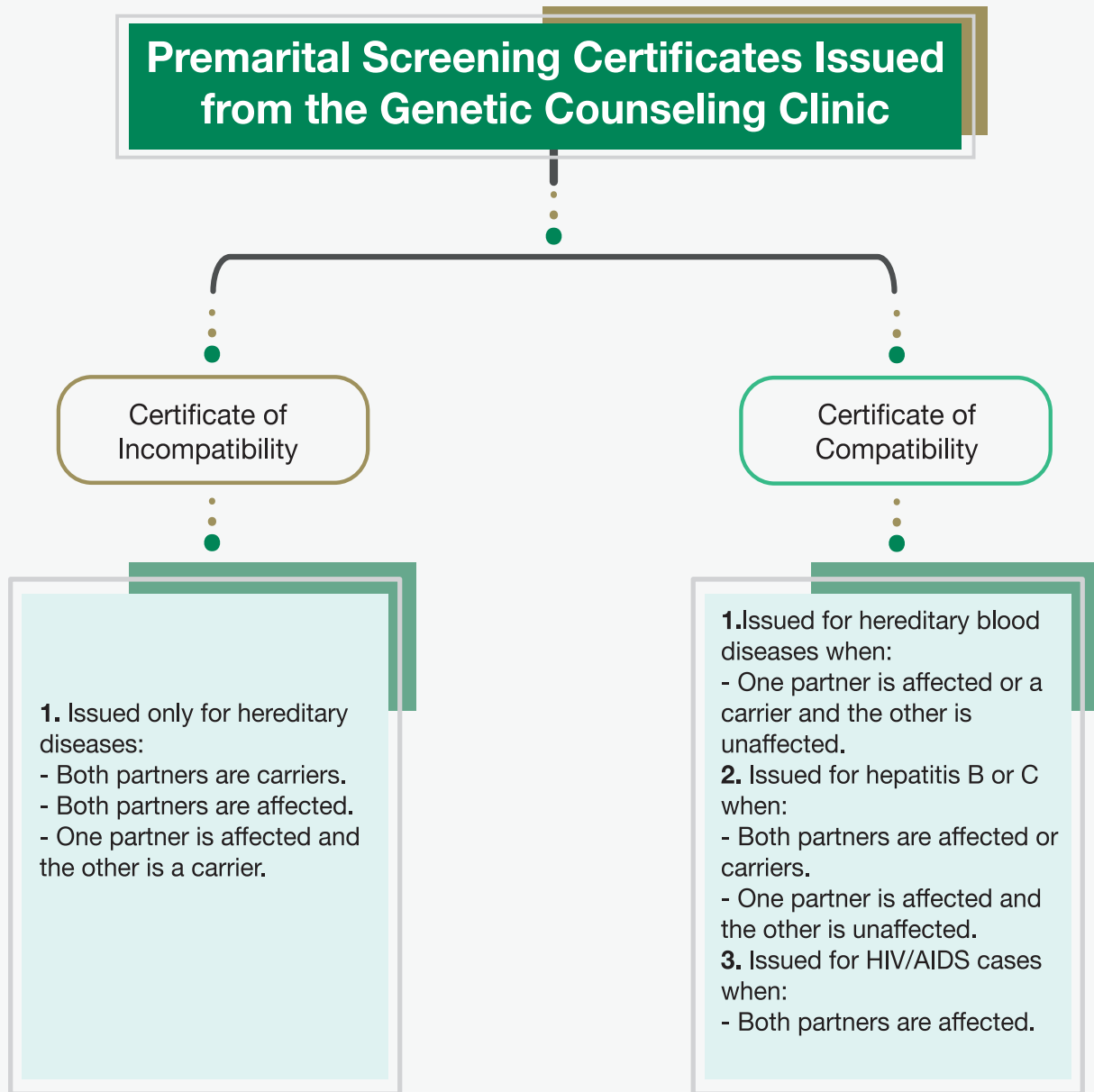
1. Referral of the hepatitis-C affected partner to the hepatitis treatment clinic.
2. The affected partner's receipt of treatment and having a negative PCR test result (unaffected).
  - The medical consultation clinic issues a certificate of compatibility **if both partners are HIV positive**, after taking **the following steps**:
    1. Referral of both HIV-positive partners to the AIDS prevention program consultation clinic in the region/city in addition to informing the other partner in coordination with the program coordinator.
    2. Both partners must sign an undertaking to continue medical treatment after marriage
    3. If an HIV-positive partner wishes to marry an unaffected partner, will be referred to the AIDS prevention program consultation clinic in the region or city to apply a request.

**Important  
Note:**



- Presence of the legal guardian is not mandatory for undergoing premarital medical screening or attending the medical consultation clinic.
- It is preferable that parents of both partners attend the educational program for the sake of limiting incompatible marriages, if possible.
- Informing the unaffected partner is not a requirement for issuing a certificate of compatibility if the other partner is a carrier for one of the hereditary diseases.
- Consent from the affected partner is required to inform the unaffected partner in order to continue the procedure of issuing a certificate of compatibility.
- Informing the unaffected partner is a requirement for issuing a certificate of compatibility if the other partner is affected by one of the hereditary or infectious diseases, after obtaining consent.

Figure 7: Certificates Issued from the Premarital Medical Consultation Clinic



# Section Four


## Premarital Medical Consultation

## » The Premarital Medical Consultation

In light of advancements in the detection and diagnosis of hereditary and infectious diseases, before and during pregnancy, and the ability to prevent them, Allah willing, medical consultation has become one of the important health care services and a principle component in premarital screening: it provides medical information and recommendations related to hereditary and infectious diseases and the risks of persons planning to get married being affected by them, helping them in making the right decisions.

## » The Medical Consultation

An interactive process between a specialized individual (the consultation physician), who will provide medical recommendations and pertinent information in an objective manner in order to help the person receiving the consultation (the person planning to get married) in making the correct choices in an appropriate professional and social environment. This process aims to provide the right psychological atmosphere that ensures the receiver of consultation's ability to make the right decision in an atmosphere of confidence, integration, and privacy.

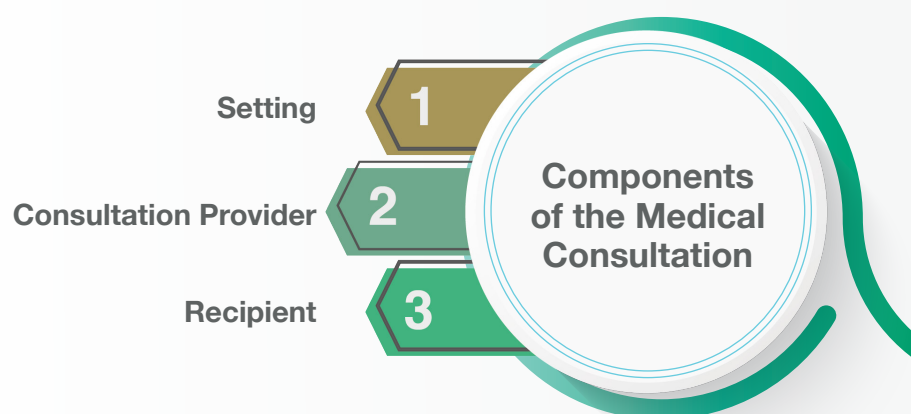


“  
The medical  
consultation is a  
constructive process  
helping the individual and  
his/her family understand  
the issue  
”

## » Objectives of the Medical Consultation

1. Provide required information on the importance of counseling.
2. Organize ideas and unify the vision for the communication process.
3. Provide the maximum benefit possible from knowledge to those planning to get married.
4. Prepare affected persons to receive and accept early treatment for infectious diseases and preventive treatment, including vaccination and others, for the partner.
5. Help persons planning to get married to accept the results, whether being incompatible for hereditary diseases or affected by one of the included infectious diseases, and to live with or receive treatment for the latter if available.
6. Finding out the needs of both partners and helping them with decision-making and encouraging voluntary responses.
7. Preparing the persons being screened for referral to the educational program for the limiting of genetically incompatible marriage.

Figure 8: Components of the Premarital Medical Consultation



## » Components of the Medical Consultation

### 1. Setting

It is important to allow an appropriate amount of time and choose the right place for the medical consultation. Consequently, **the following need to be considered:**

- Choosing an appropriate time for the visit and that the visit is used solely for medical consultation.
- Allotting a specific and adequate time duration for the session (no less than 30 minutes and no longer than one hour).
- The place for consultation should be comfortable and quiet.
- Hanging a do-not-disturb sign on the door and not allowing anyone to enter during the session.
- Turning phones off during the session.
- No children are allowed during the session.
- The session is limited to the persons involved.
- The clinic should contain a computer with printer and screen, posters, and pamphlets, and there should be four comfortable chairs set around a small table.

### 2. The Consultation Provider

#### - Who provides consultation?

The provider of consultation must be a physician or genetic counselor trained in communication skills and hereditary blood diseases and specialized in one of the following specialties, listed in order of priority:

- Family and community medicine consultant.
- Internal medicine consultant.
- Hematology consultant.
- Infectious disease consultant.
- Psychiatry consultant.
- General practitioner with a certificate of training from the Healthy Marriage Program administration.

### - The Role of the Medical Consultation Provider

- The medical consultation provider meets with the person planning to get married to obtain important information on the premarital case regarding the genetic family history in order to confirm absence of hereditary diseases in the family.
- The medical consultation provider identifies the type of transmission of the hereditary or infectious disease if the applicant had been diagnosed beforehand, and in some cases orders the required blood tests.
- The medical consultation provider explains the details of the condition to the patient along with possible outcomes and choices.
- The medical consultation provider ensures that the applicant understands the issue and encourages him or her to ask questions and inquire about the disease and provides them with answers.
- In addition, the medical consultation provider follows the applicant's case either in the clinic or by phone call.

### - Qualities of the Premarital Medical Consultation Provider

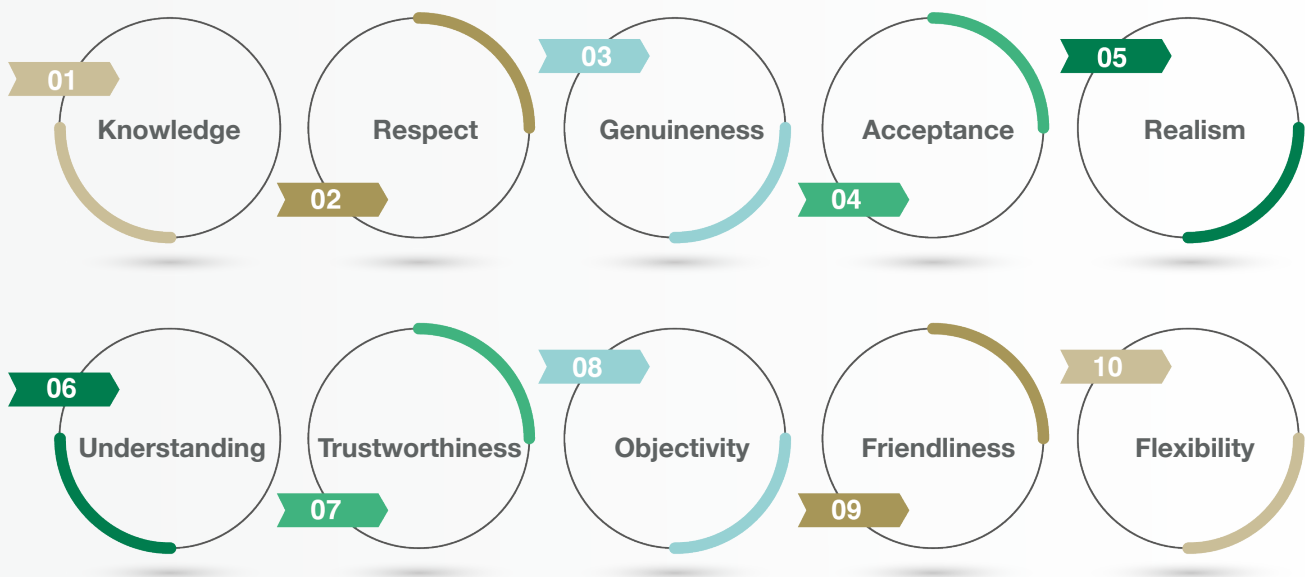


Figure 9: Qualities of the Premarital Medical Consultation Provider

### **Knowledge**

- Knowledge of all the issues related to the subject in consultation.
- Acquire skills based on studies and experience.
- Knowledge of the issues related to the Healthy Marriage Program.
- Knowledge of the resources available on subjects pertaining to the program and related administrations.
- Knowledge of the community's customs and practices that affect progression of the program in the right direction.
- The consultation provider must have a constant desire to learn, especially from mistakes.

### **Respect**

- Display positivity and respect, and has the ability to fulfill the needs of all parties.
- Empathize and communicate with the aim of reaching a decision, viewing the applicant as a unique individual of value and respect.

### **Genuineness**

- Communicate directly and courteously.
- Avoid using professional and technical terms (using an easy and simple language to explain).
- Never acting insincerely or behaving rudely.
- Use appropriate visual aids (videos, diagrams, posters, forms, and others).

### **Acceptance**

- Accepting the person receiving consultation; never being insincere; and treating the applicant, regardless of his or her customs and behaviors, sincerely and honestly without arrogance.
- Avoids judging the applicant morally or socially or dictating what he or she should do.
- Listens and accepts opinions and views without showing an opposing attitude.
- Personal values and beliefs must not affect the consultation session.

### Realism

- The consultation provider must not have any expectations pertaining to the person receiving consultation.
- Acknowledging the applicant's ability or inability to perform tasks.
- Must not make any judgements in advance.

### Understanding

Takes applicants' words and views into account and understands their values, feelings, and the problems they may face as well as their experiences and expressions (verbal and non-verbal).

### Trustworthiness

- The consultation provider must be trustworthy.
- Does not give false hopes or draw a bleak picture.
- Maintains confidentiality and is committed to what is in the applicant's best interest.

### Objectivity

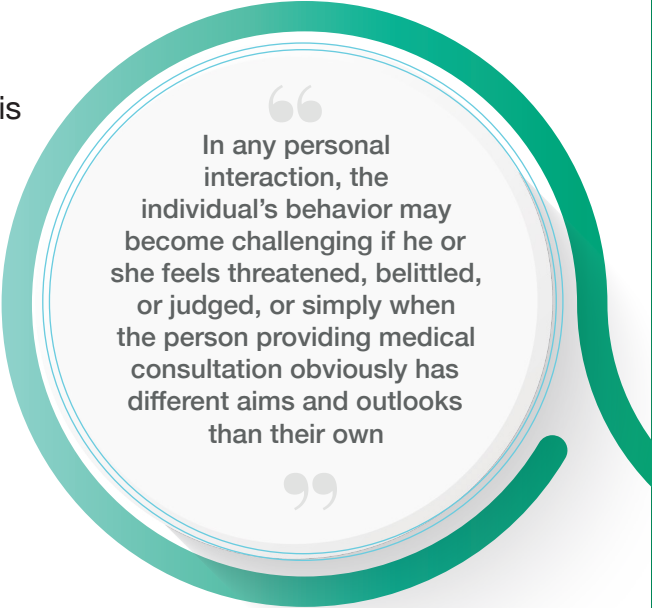
- Relationships must not conflict with the person's likes and dislikes.
- Must not expect compensation of any kind in return for services rendered.

### Friendliness

- The ability to deal with others easily and kindly.
- Showing empathy with the consultation recipient.
- Is warm and easy to reach.

### Flexibility

- Avoids rigidity of opinion and tries to provide alternatives and respond to current and possible issues in case of marriage cancellation and acceptance of the incompatibility decision.



“  
In any personal  
interaction, the  
individual's behavior may  
become challenging if he or  
she feels threatened, belittled,  
or judged, or simply when  
the person providing medical  
consultation obviously has  
different aims and outlooks  
than their own  
”

## - Consultation Skills and Techniques

Consultation involves a group of small skills known as “influencing skills.” These skills are continuously implemented during the consultation to connect with the recipient and work through reviewing the issues with him or her.

“It is not necessary to utilize all of these skills in the consultation session, but the provider must know how to use these skills in every step of the consultation when needed.”

01 Attending

Effective listening 02

03 Silence

Immediate response 04

05 Use of non-personal phrases

Asking questions 06

07 Interpretation

Consultation Skills

Figure 10: Premarital Medical Skills

### Attending

This is the consultation provider’s ability to show interest in the recipient, and includes:

#### - Concentrating, which is evident through verbal communication

keywords - voice

#### - Use of nonverbal skills

listening - eye contact - remaining calm - hand gestures - nodding - sitting posture

#### - Comfortable seating arrangement

Sitting face to face - proper distance - absence of obstacles - remaining calm.

- **Minimizing distractions**

Avoid interruptions and distractions like using a mobile phone.

- **Remember**

- Introduce yourself.
- Explain your role.
- Ensure a comfortable setting (face-to-face communication).
- Keep eye contact.
- Remain calm.

### **Effective listening (positive listening):**

Effective listening is the ability to listen (with interest) to the recipient's verbal and nonverbal expressions.

- **Components of effective listening**

- Acceptance.
- Reflecting emotions.
- Interpretation.
- Concentration.

- **Obstacles to effective listening**

- Preoccupation.
- Judging the recipient.
- Unclear message.
- Jumping to conclusions.
- Too many details.
- Preconceived judgements.

### **Silence**

- **Silence of both the recipient and consultation provider in order to reflect on what decision to take:**

- Helps the recipient collect his or her thoughts or think about an issue.
- Helps the recipient express his or her feelings.
- You must interrupt the silence if the recipient shows signs of stress.

### Immediate response


- The consultation provider's ability to handle situations at a given moment.
- How much does the recipient affect the service provider?
- How much does the service provider react to the recipient?

### Use of general phrases (not referring to a specific person)

- Speaking in third person when commenting on personal issues.
- Is essential to identifying and exploring the recipient's feelings.
- Used when presenting different choices to the recipient.

### Asking questions

- Gives the recipient a chance to express himself or herself freely.
- Helps the service provider in identifying the recipient's needs and priorities.
- Is important as a conversation starter and for determining the recipient's attitudes and interests.
- Open-ended questions are preferable.



“ Looking at the greater picture and understanding the different circumstances —and related emotions and behaviors— can be a great tool for counselors when helping others. ”

### Interpretation

- Asking the recipient to clarify the meanings of phrases strengthens the communication process.
- The consultation provider may need to clarify what was said (**e.g.**, did you mean.....??).
- Makes understanding easier.
- Verifies information.

### Paraphrasing

- Repeating what the recipient said using different words (synonyms).
- Good listening is important for paraphrasing to be effective.
- Helps in understanding and correcting the recipient's phrases.
- Changing the context of what was said by responding to the recipient's comments and rephrasing them in a more positive way.

- **Empathy**

- Empathy = directing the idea or emotion toward the recipient.
- Empathy is expressed by either repeating the recipient's words in order to verify correct understanding and deep listening or by reflecting feelings that help the communication process.
- Explaining and reviewing what the recipient has understood.
- Identifying the recipient's main feelings and emotions.
- Identifying the strength of feelings (e.g., "It is clear that you are very angry and anxious," or "It seems that you are confused as result of what happened to you").

- **Challenging (confronting)**

- Challenging is a way of exploring conflicts in the recipient's words.
- Helps the recipient recognize blind (or unknown) areas he or she has.
- If the recipient's response is constant denial and refusal, the consultation provider must not insist on the point.

- **Summarizing**

- Summarizing what was said by both the recipient and the consultation provider helps both parties in understanding each other.
- At the end of every session the consultation provider should summarize the main points and decisions that need to be made.

### **3. The Consultation Recipient**

Recipients of medical consultation differ in personality, culture, and education; and it is, consequently, pertinent to have good knowledge of personality patterns and their weaknesses and strengths to be able to interact with them with flexibility and ease. **Of the most important personality patterns:**

**1. The simple personality:** Is quiet - trusts others - wants to listen to others.

- **How to interact with them:**

- Listening well.
- Staying on topic and not straying.
- Being serious when needed.

**2. The indecisive personality:** Shows signs of shyness and anxiety - finds difficulty making decisions - feels lost when faced with many choices - tends to rely on others - asks for more information and reassurances.

- **How to interact with them:**

- Try to build self-confidence.
- Lessen the degree of anxiety and shyness.
- Help him or her with decision-making.
- Provide information and additional reassurances.

**3. The course personality:** These persons are harsh when dealing with others as well as themselves. They sometimes insist on their opinion and may exhibit unexpected reactions when receiving knowledge of being affected by or carrying a disease.

- **How to interact with them:**

- Practicing self-control and remaining calm.
- Listening well.
- Using their knowledge and ideas.
- Being firm when giving an opinion.
- Using (yes.....but) with them.

**4. The stubborn personality:** Characteristically ignores your view point and does not want to listen, and refuses concrete facts. This personality is rigid and harsh when dealing with others.

- **How to interact with them:**

- Try to involve others to form a unified opinion against his or her view.
- Ask him or her to accept others' opinions for a short time in order to reach an accord.
- Use the "yes.....but" method with them.

**5. The slow-to-react personality:** Characteristically cold and difficult to deal with, but is a great listener, understands information, and does not want to object.

- **How to interact with them**

- Use silence to compel them to answer.
- Pose open-ended questions that require long answers.
- Listen well.
- Take your time when dealing with them and do not rush things.
- Show them respect and friendliness.

» **Meeting with the Consultation Recipient**

Meeting with the recipient of medical and genetic consultation comes as part of a plan consisting of general steps, not related to the disease, and steps specific to the detected disease.

**Firstly: The General Steps**

A number of factors need to be taken into account, regardless of the detected disease, according to the consultation process timeline (before, during, and after the consultation).

- 1. Before the consultation:** Collecting information about the applicants' disease, preparing mentally and psychologically before the meeting, and preparing the meeting place with the goal of conveying the importance of the recipient and the issue to be discussed.
- 2. During the consultation:**
  - Greet the applicant by standing (as a gesture of respect) and welcoming him or her with a cheerful affect and warm handshake, **for example**, "Assalamo alaikom, welcome, please sit down." Use his or her name or preferred nickname if known to ease any feelings of stress, shyness, or hesitation and encourage him or her to express any hidden emotions and beliefs.
  - Introduce yourself and begin the conversation by asking an open-ended question that can have different answers, **for example**, "How do you feel? How are you today? How can I help you?" giving him or her the freedom to speak.
  - Show qualities befitting of a consultation provider and use the necessary skills (mentioned earlier) to ensure success of the session.
  - Ending the consultation session: Because the last impression has an important effect on the recipient, it is preferable to say goodbye to the visitors in as warm a manner as they were welcomed.

### 3. After the consultation:

- The medical consultation provider follows the applicants' case after consultation, either in the clinic or through phone calls, and provides them with the available educational material.
- Refers the consultation recipient and his or her family to the sessions of the educational program to limit marriage of genetically incompatible couples when required.
- Stresses the importance of follow-up with the genetic counselor and pre-pregnancy planning clinics for genetically incompatible couples that decide to marry.

### Secondly: Specific Steps Related to the Disease Detected or to be Discussed (Thalassemia, Sickle Cell Anemia, Hepatitis B and C, and HIV/AIDS)

1. Providing the consultation recipient with the required information mentioned at the beginning of the manual.
2. Explaining to the consultation recipient using available audiovisual aids.

#### » General Guidelines for Delivering Bad News

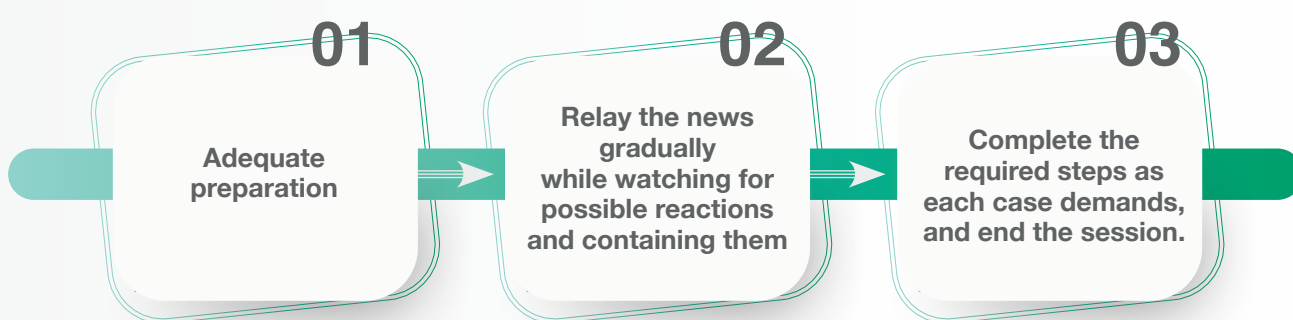
Receiving bad news is one of the causes of mental health deterioration, and may cause a harmful shock to the recipient. It is therefore important to use flexible means in a gradual manner in order to lessen the blow and avoid the psychological consequences that may result from delivering the news.

There are many factors that need to be taken into account with the person receiving the bad news depending on the situation and the news itself and, so, begin by **ensuring the following:**

- The person is prepared psychologically and physically to receive the bad news.
- Choosing the right place and time.
- Making sure that the bad news is not the first thing mentioned.

“  
Relaying bad news requires knowledge, technique, and skill, as many people have suffered health deterioration because of the method and manner in which bad news was relayed.  
”

- Begin, after welcoming the applicant, by explaining the importance of premarital screening and its role in the early detection of diseases for prevention and protecting children, Allah willing. **The earlier the disease is detected, the higher the chances are for recovery and prevention of transmission of the disease to children.** Then begin to relay normal results to the applicant. The individual may suspect that something is abnormal, and this is part of the preparation process, but if he or she does not ask questions or begin the conversation, begin by saying, for example, **“but one of the results is not great (or abnormal),” then wait a little for him or her to absorb the information.**
- Use the shortest sentence you can.
- Be close to him or her so that you can provide moral support



### » Reasons for the Rejection of Recommendations:

Even after recommendations and counseling are given on the dangers of the diseases and chances of their transmission to children, certificates of incompatibility are issued. **Eleven reasons** why couples planning to get married reject the recommendations given by the medical consultation clinic are listed:

1. Prior emotional bond.
2. Pressure from the family.
3. Not being convinced by the provided medical counseling.
4. Thinking that the possibility of transmission of the hereditary disease to children is low.
5. The marriage contract has been made but not yet registered.
6. All preparations have been made.
7. Avoiding loneliness.
8. Familial and social status.
9. Financial status.
10. The couple are not planning to have children.
11. Believing in predestination and the divine decree.

## » The Educational Program for Limiting the Marriage of Genetically Incompatible Couples:

### • Aims of the Educational Program

1. **Main aim:** To limit genetically incompatible marriages, which lead to the birth of children with hereditary blood disorders.
2. **Detailed Aims:**
  - **Aims specific to the couple planning to get married:** To change the direction of members of the community planning on marriage regarding genetically incompatible marriages.
  - **Aims specific to parents of persons with thalassemia or sickle cell anemia:** Mitigating sadness and psychological suffering through the sharing of experiences with other parents going through the same ordeal.

### • Targeted group

1. Hereditary incompatibility couples planning to get married.
2. Parents of hereditary incompatibility couples planning to get married.
3. Parents of children diagnosed with thalassemia and sickle cell anemia.

### • How to register

#### 1. For persons planning to get married:

- In case of incompatibility, the couple are directed by the consultation physician to the health education clinic to attend sessions.
- The couple are directed to bring their parents along to the educational program sessions.
- Register names and information of the couple planning to get married as well as their parents'.
- Document attendance at each activity.

#### 2. For Families of persons with thalassemia or sickle cell anemia:

- Advertising and inviting thalassemia and sickle cell anemia patients and their accompanying family members to register in the group, and inviting them in coordination with the hereditary blood disorder clinics or societies, to take part in the focus groups.

- Persons with thalassemia or sickle cell anemia and family members who wish to register must sign the consent form before registering for focus groups.
- Register their names and information.
- Inform registered persons of focus group dates and ensure their attendance.



Certificates of incompatibility will not be issued unless both parties have attended all the educational program sessions.

- **The process**

- **For persons planning to get married and their families**

1. After registering in the program, the couple are handed the timetable of activities for persons planning to get married in addition to copies for each of their respective parents
2. Each partner attends the sessions separate from the other.
3. Activities are attended on a weekly basis and in succession.
4. At the start of each activity, the group members register their attendance.
5. Registered persons must attend all three activity stages.
6. After ensuring the couple's attendance at all activities, if they insist on going ahead and finalizing the marriage, they are issued a certificate of incompatibility.



If one partner from the invited couple does not attend an activity, the program is restarted from the beginning and the couple must attend the activities again.

- **For Families of Persons with Thalassemia or Sickle Cell Anemia**

1. They are provided with activity dates, but their attendance is optional.
2. In their case, attendance is to the focus groups (see table for program activity stages)

- **Program Activity Stages:** All sessions are available every week.

Activity Time	Duration	Description
<b>Week One</b>	<b>One hour</b>	<p><b>An educational session on hereditary blood disorders, discussing:</b></p> <p>Definition, causes, symptoms, treatment, prevention, consequences of incompatible marriages, and available solutions for having healthy children.</p> <p>» Carried out by the health educator or nurse or consultation physician.</p>
<b>Week Two</b>	<b>One hour</b>	<p>A session to view influential educational films and answer questions the couples may ask</p> <p>» Carried out by the health educator or nurse</p>
<b>Week Three</b>	<b>One hour</b>	<p>Focus group: A discussion meeting with parents of children who have hereditary blood disorders, to envisage the suffering that parents and children go through when a child is diagnosed with the disease and how the disease affects their lives.</p> <p>» Carried out by the health educator (group counselor)</p>

» **Premarital Screening for a Non-Saudi Applicant**

In cases where a Saudi citizen (man or woman) wishes to marry a non-Saudi partner, the following tests are carried out:

- The Saudi citizen (man or woman), woman born in the Kingdom of Saudi Arabia of a Saudi mother, GCC citizens, and Displaced tribes undergo the premarital screening process explained thus far in the manual.

- The non-Saudi partner undergoes the following tests:
  - **Hereditary Diseases:**
    1. Sickle cell anemia.
    2. Beta thalassemia.
    3. G6PD deficiency anemia.
    4. Hemophilia.
  - **Infectious diseases:**
    1. Hepatitis B.
    2. Hepatitis C.
    3. HIV/AIDS.
    4. Syphilis
- In case of a female Saudi citizen marrying a non-Saudi man, a toxicology screen is added.

**After completion of the screening tests for both partners:** a report is written for each partner with the test results using the appropriate form (see Forms section).

### » **Premarital Screening for an Applicant Who Completed Screening Tests in a Non-MOH Facility**

In order to enter data and test results for an applicant who completed screening tests in a facility other than MOH centers, ensure the following:

1. The applicant must bring an authenticated report stamped by the administration of the government hospital where the tests were done.
2. All personal information on the screened applicant must be clear in the stamped report (name, national ID, sex, date of birth).
3. Verify that the report contains all laboratory tests included in the program.
4. After entering the data and test results into the electronic system, the report is kept in the archives.

## » Premarital Screening for an Applicant Who Completed Screening Tests Outside the Kingdom of Saudi Arabia

In order to enter data and test results for an applicant who completed screening tests in a facility outside the Kingdom, the following must be ensured:

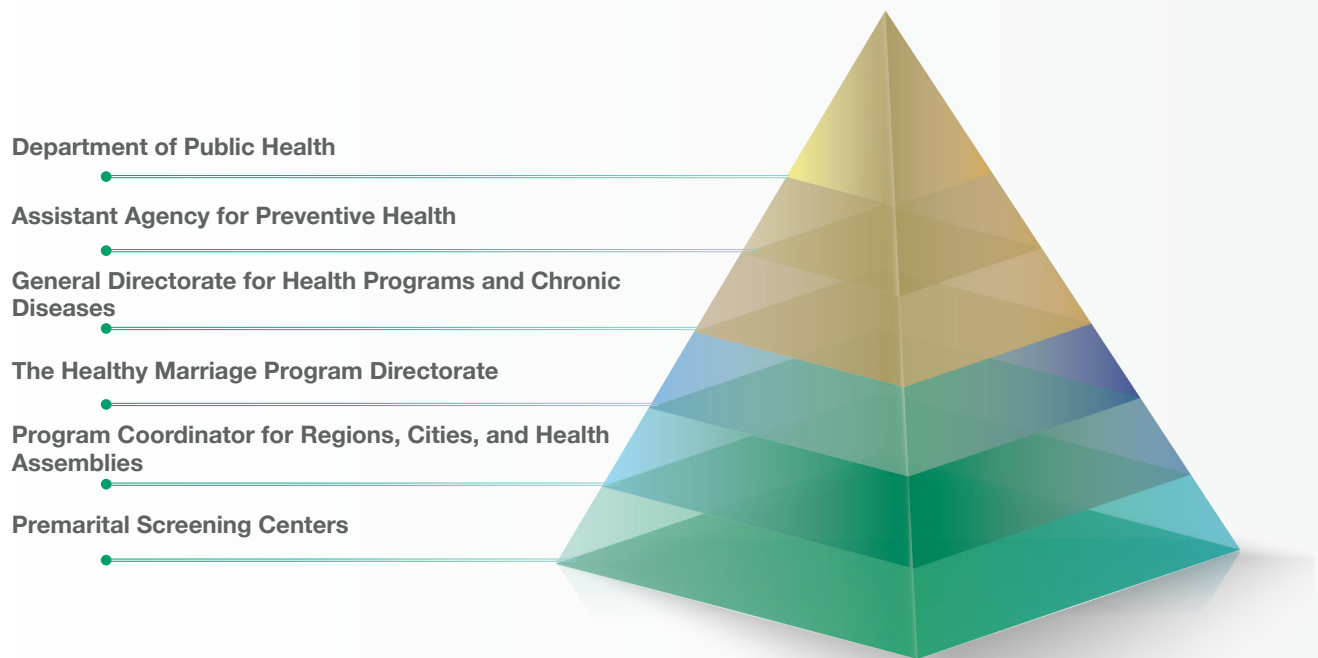
1. The applicant must bring an authenticated report stamped by the Saudi Embassy.
2. All personal information on the screened applicant must be clear in the stamped report (name, national ID, sex, date of birth).
3. Verify that the report contains all laboratory tests included in the program.
4. After entering the data and test results into the electronic system, the report is kept in the archives.

# Section Five

## Organizational Structure of the Healthy Marriage Program

## » Organizational Structure of the Healthy Marriage Program

### » Organizational Structure of the MOH Healthy Marriage Program



### » Duties of the Regional Healthy Marriage Coordinator

- Create executive plans and developmental aims for the Healthy Marriage Program to achieve its strategic objectives in accordance with MOH guidance.
- Direct execution of the Healthy Marriage Program activities and supervision and follow-up of executive plan implementation.
- Coordination and cooperation with health programs related to the Healthy Marriage Program.
- Coordinating the writing of letters, saving and archiving transactions, assembly of a work team, and distribution of duties and roles.
- Contacting supervisors at premarital screening centers and informing them of directions sent from the ministry: either new circulars, required tasks, or dates of courses and activities.
- Training of regional personnel and periodic supervision and follow-up and verification of the authorizations given in the electronic system to center personnel according to their duties, and making changes when required.

- Supervising the execution of all premarital screening services at the centers including tests, vaccination, and medical consultation in coordination and cooperation with related departments in the directorate such as (the Department for Primary Healthcare, Medical Supplies, Laboratories, hospitals).
- Verify availability of requirements in the centers for providing premarital screening services
- Participate in the reviewing and updating of manuals, forms, logs, and healthy marriage awareness pamphlets.
- Raising health awareness on the importance of premarital screening and spreading awareness in the community, especially among persons planning to get married **through:**
  - Participation in and arranging seminars, workshops, courses, and awareness activities.
  - Coordinating and cooperating with relevant departments and government, private, scientific, and academic organizations in the execution of collaborative awareness programs on the importance of a healthy marriage.
- Improving the quality of health services provided in the premarital screening centers through the activation of:
  - Appointments.
  - Evidence-based clinical practice guidelines for center personnel.
  - Training personnel on the use of the guidelines.
  - Complying with referral regulations according to MOH directions.
  - Following workflow and quality through implemented quality standards.
- Cooperation, coordination, and participation in the preparation of local research and studies (at the level of the region/city).
- Following the implementation of circulars and directions related to the Healthy Marriage Program.
- Submission of complaints and obstacles to the regional health departments and participating in solving them.

## » Organizational Structure of the Premarital Medical Screening Center

### • Premarital Medical Screening Center

The Premarital Screening Center is considered a prevention, not treatment, center, that handles health, not disease, cases; providing specific services to persons planning to get married from registration and collection of required data to the issuing of screening certificates, a main component that must be presented to the marriage official in order to complete the required procedures for the marriage contract.

The distribution of accredited premarital screening centers for regions and cities in the Kingdom can be viewed at the following link.



<https://www.moh.gov.sa/HealthAwareness/Beforemarriage/Pages/002.aspx>

### • Premarital Screening Center Departments

1. Reception department.
2. Health education department.
3. Vaccination department.
4. Laboratory department.
5. Medical consultation clinic.

### • Center Personnel

- **Premarital Screening Center Supervisor:** General supervision of the flow and organization of work at the center and is given the authorization of center supervisor in the electronic system.
- **Reception Clerk:** Responsible for receiving premarital screening applicants, entering their data, and directing them, and is given the authorization of reception in the electronic system.
- **Health Educator or Genetic Counselor:** Responsible for providing all information on premarital screening and the diseases included and answering applicant questions, in addition to coordination and management of the educational program for genetic incompatibility cases. Is given the authorization of health educator in the electronic system.

- **Nurse:** Responsible for preparation, safety, and administration of vaccines included in premarital screening



Blood samples are drawn by the nurse or laboratory technician.

- **Laboratory Specialist or Technician:** Responsible for ensuring correctness and validity of blood samples, running tests, and writing results to be reviewed and approved by the specialist; and is given the authorization of laboratory coordinator, genetic laboratory coordinator, or infectious laboratory coordinator in the electronic system.
- **Laboratory Physician:** Responsible for reviewing and approving test results and is given the authorization of laboratory physician, infectious laboratory physician, or genetic laboratory physician in the electronic system.
- **Medical Consultation Clinic Physician:** Responsible for informing applicants of test results; providing medical consultation; explaining in full the nature of the disease and its risk factors, chances, modes of transmission, and preventive measures; referring cases when required; and issuing certificates. The medical consultation clinic physician is given the authorization of healthy marriage specialist physician in the electronic system.

## » Screening Stages and Center Personnel Responsibilities

1. **Reception:** This role is taken on by an experienced administrator with good communication skills with applicants, and includes data entry and **the following responsibilities:**
  - Receiving visitors in a welcoming manner.
  - Verifying the identities of applicants coming for screening.
  - Verifying the applicant's possession of a court order for screening minors, according to the Handbook of Medical Screening for Early Marriage.
  - Preparing the appointment schedules for premarital screening.
  - Registering applicants coming for appointments, entering all required data into the electronic system, and printing out sample barcodes.

- Referral of applicants to the health education clinic and area for blood sample collection and vaccination.
- Recording referral appointments to the medical consultation clinic.
- Answering applicant and administrative questions as dictated by public interest.
- Ensuring that the networking equipment is in working order.
- Submitting needs to the center supervisor.
- Maintaining good personal appearance and hanging the ID badge with name and job title on the chest.
- Complying with decisions taken by the program management.
- Maintaining confidentiality of applicant data.

**2. Health Education Clinic:** Is run by a nurse experienced in health education, a health educator, or a genetic counselor; with good communication skills with patients, and who is **responsible for the following:**

- Welcoming persons coming for screening in a courteous manner.
- Verifying the identities of persons coming for screening.
- Giving adequate explanation of the premarital medical screening and the possible results.
- Providing health education on the diseases included in the screening, how serious they are, and how to prevent them.
- Answering applicants' questions and concerns.
- Providing health education on the importance of the MMR vaccine and importance of avoiding pregnancy for one month at least after receiving the vaccine.
- Coordinating and managing the educational-awareness program for genetic incompatibility cases.
- Submitting health education needs and necessities to the center supervisor.
- Ensuring that data are saved and archived.
- Maintaining good personal appearance and hanging the ID badge with name and job title on the chest.
- Complying with decisions taken by the program management.

**3. Vaccination Clinic:** Is run by a nurse experienced in vaccination who has good communication skills with patients and is **responsible for the following:**

- Welcoming persons coming for screening in a courteous manner.
- Verifying the identities of persons coming for screening.
- Ensuring that applicants attend the health education clinic before receiving the vaccine.
- Checking for contraindications to the MMR vaccine.
- Administering vaccines included in premarital screening (MMR, hepatitis B).
- Ensuring that the woman planning to get married signs the agreement form to take the MMR vaccine and avoid pregnancy for one month at least after receiving the dose.
- Ensuring that the woman planning to get married signs the statement of refusal to take the MMR vaccine in case of refusal.
- Ensuring the signing of the undertaking to complete the required hepatitis vaccine dose.
- Ensuring the disposal of medical waste in accordance with quality and safety standards.
- Submission of vaccination needs and requirements to the center supervisor.
- Entering the data of female applicants into the electronic system for vaccination in accordance with MOH directions.
- Ensuring that data are saved and archived for safekeeping.
- Maintaining good personal appearance and hanging the ID badge with name and job title on the chest.
- Compliance with decisions taken by the program management.

**4. Blood Sample Extraction:** Is carried out by a laboratory technician or nurse experienced in blood sample collection, who has good communication skills with patients, and is **responsible for the following:**

- Welcoming persons coming for screening in a courteous manner.
- Collecting blood samples following the quality and safety standards in place regarding methods used for extraction, storage, and transportation.
- Ensuring the disposal of medical waste in accordance with quality and safety standards.
- Submission of blood extraction needs and requirements to the laboratory specialist.
- Maintaining good personal appearance and hanging the ID badge with name and job title on the chest.
- Complying with decisions taken by the program management.

## 5. The Laboratory Department

- **Duties of the laboratory technician or specialist:**

- Is responsible for receiving blood samples and checking their validity for testing.
- Registering samples into the laboratory log and system.
- Carrying out required laboratory screening tests according to instructions and records the results for review and approval by the laboratory specialist.
- Referring samples with irregular electrophoresis results to reference laboratories and recording this in the laboratory record as a follow-up.
- Receiving screening results from the reference laboratory.
- Entering data and screening results into the electronic system.
- Ensuring that the networking equipment is in working condition.
- Ensuring that data are saved and archived for safekeeping.
- Complying with decisions taken by the program management.

- **Duties of the laboratory physician:**

- Ensuring smooth workflow in the premarital screening laboratory.
- Approving results after entering all tests.
- Submission of laboratory test needs and requirements to the department of laboratories.
- Ensuring that data are saved and archived for safekeeping.
- Complying with decisions taken by the program management.

**6. The Medical Consultation Clinic:** Is a clinic designated for relaying positive premarital screening test results and providing medical counseling specifically for hereditary and infectious diseases. It is run by a coordinator (nurse) and a family physician with a certificate of training in medical counseling accredited from the program administration.

- **Duties of the medical consultation clinic physician:**

- Welcoming applicants for premarital screening in a courteous manner and maintaining confidentiality of the consultation.
- Entering all required data in the records and checking referral forms and screening certificates.
- Verifying identities of premarital screening applicants.
- Providing medical consultation and referral for persons requiring care and follow-up.
- Ensuring that data are saved and archived for safekeeping.
- Maintaining good personal appearance and hanging the ID badge with name and job title on the chest.
- Complying with decisions taken by the program management.

- **Duties of the screening center supervisor**

- General supervision over center workflow and distribution of tasks among personnel.
- Ensuring smooth workflow in the networking program and that the equipment is in working order.
- Submission of the names of new employees to grant them appropriate authorization in the electronic system.
- Answering applicants' questions related to premarital screening.
- Complying with decisions taken by the program management.

- » **The Electronic System and Authorizations Granted:**

- The Healthy Marriage system on the “Seha” platform is the only official electronic system for the MOH, and paper certificates are not accepted outside the system.
- You can look at the manual for the Healthy Marriage electronic system to find out authorizations and how to use it.
- The electronic system avoids the need for paper documents and forms, and in the event of system shutdown for over 48 hours, paper forms will be used and later entered into the system.

# Section Six

## Evaluation and Follow-Up

## » Evaluation and Follow-Up

The Healthy Marriage Program is a program implemented in all regions of the Kingdom and involves holding various activities related to other programs, such as the Infectious Disease Program and the departments of Laboratories, Vaccines, and Supplies; and consequently, follow-up data are concerned with execution input and operations and program output.

**The Healthy Marriage Program** helps the executive partners use its results as a reference for advancement of the programs toward achieving their goals, determining the tools that require changing, and discovering obstacles and implementing recommendations required to overcome them.

The staff at the Healthy Marriage Program must plan and execute evaluation and follow-up programs and be well acquainted with follow-up concepts, methods, and tools in addition to causes, main elements, and steps required for the implementation of an evaluation and follow-up work plan and methods for overcoming difficulties that hinder program follow-up, focusing on counseling programs and focus groups.

This section also highlights the bodies responsible for program evaluation and follow-up, the relevant indexes that help to measure program output and results, data flow planning and the responsibility of each level on quality, data analysis and interpretation, and how to use the results for decision-making and supporting and improving the program.

- **Follow-Up:** A routine data-collection process that assists in evaluating program progress toward achieving its goals, and includes the following:
  - Compiling everything the program does.
  - Continuous observation of the quality of provided services.
- **Assessment:** Utilizing research methods to systematically study the program's effectiveness.
  - Designing the evaluation method.
  - Defining a comparison or control group when needed.
  - Evaluating short- and long-term results.
  - Specialized studies.

## » The Comprehensive Follow-Up and Assessment Framework

Evaluation and follow-up can be implemented at different stages of the program, and during each stage different data are collected that are complementary and show how the program was executed and what the results were. Following is a detailed explanation of the roles and responsibilities of each level of personnel related to evaluation and follow-up.

## » The MOH Healthy Marriage Program

- Evaluating primary requirements, number and distribution of premarital screening clinics in different regions, and expansion plans.
  - Follow-up of the input and the execution process.
  - Data pooling from activity implementors at either the national level, from similar programs, or regional level, from clinics carrying out screening through coordinators.
  - Data pooling and analysis, preparation of reports, and briefing all partners on the results.
  - Submission of reports to higher authorities and decision makers at the level of the MOH and stakeholders.
  - Utilizing results to support continuation of the program and the identification of gaps and treating them.
- 
- **Regional Healthy Marriage Coordinators:** Follow-up and discussion of center indexes and work outputs with the Healthy Marriage Program administration.
  - **Supervision:** Field supervision over program activities, divided into two main parts:
    1. Supervising program performance in relation to applicant path and quality of services provided and implementing guidelines.
    2. The second part is related to reviewing reports and registration and index calculation.
  - **Levels of supervision**
    1. From the MOH to the regions, which includes selected centers.
    2. From the program coordinator to centers, which includes all premarital screening centers in the region/city/health assembly.

- **The Supervision Process**

- The regional/city program coordinator is responsible for supervision and follow-up of the work at premarital screening centers and personnel working in them, checking performance, replying to questions, and providing Healthy Marriage Program needs in line with the executive plan put in place with related authorities.
- The type of supervisory visit (periodic or follow-up) is determined according to the plan in effect or as needed.
- Preparation for the supervisory visit goes through three stages:

- 1. Before the visit**

- Preparing a list of centers and obtaining required approval.
- Determining the objectives of the visit and type (periodic or follow-up).
- Preparation of the supervision form.

- 2. During the visit**

- Meeting with the premarital screening center manager and coordinator before and after the supervisory visit to express appreciation for their support, review positive and negative points, and discuss recommendations.
- Meeting with all center personnel and inspecting the flow of work and visitors to the center, identifying strengths and weaknesses, and finding solutions to problems.

- 3. After the visit**

- Preparation and submission of the visit report and recommendations to the Health Programs and Chronic Diseases Department in the region/city/health assembly.
- Scheduling the date for the follow-up visit two-weeks after the supervisory visit to verify correction of negative observations.

- » **Choosing Performance Indexes**

Indexes are the tools used to verify that a program is moving in the right direction and achieving its desired goals, and indicate possible changes in conditions and the amount of change that would lead to improvement in service providing.

1. Prevalence of hereditary diseases among applicants for premarital screening.
2. Prevalence of the infectious diseases included in screening among applicants for premarital screening.
3. Percentage of responses to genetic counseling.
4. Percentage of safe marriages among screening applicants.
5. The rate of days required for applicant results to be approved, counted from the date of blood sample extraction to the date of result approval in the electronic system.
6. The percentage of completion of procedures for opened premarital screening appointments.

### » **Use and Publication of Evaluation and Follow-Up Results**

Publication of evaluation results increases effectiveness of the program, helps to support future activities, prevents duplication of evaluation efforts that may occur if others were not aware of previous results, and demonstrates the importance of follow-up and evaluation as a program developmental tool and includes feedback for regions and stakeholders on the level of the ministry and community companies.

### » **Premarital Screening Center Accreditation**

#### • **MOH requirements for the accreditation of a center providing premarital screening services**

Centers, whether primary care centers or hospitals, must fulfill several requirements before obtaining approval to provide premarital screening services:

1. Submission of a request to provide screening services to the coordinator in the region/ city/health assembly from the manager of the center.
2. The coordinator visits the center to verify availability of the required screening departments and qualified personnel to run it.
3. Securing the necessities needed for premarital screening.
4. After being granted approval, personnel are trained in order to activate the screening service.

» **General Instructions:**

1. Designating a specific area for reception and health education with nearby areas for blood sample extraction and medical consultation.
2. Securing the qualified personnel, laboratory equipment, and networking requirements.
3. Securing a network connection with screening centers using the required program.
4. Committing to screening for the five diseases included in the Healthy Marriage Program (sickle cell anemia, beta thalassemia, hepatitis B and C, and HIV/AIDS) until further regulations are issued.
5. Maintaining the confidentiality and privacy of all applicants' information.
6. Hiring a Premarital Screening Program supervisor and appointing a deputy supervisor to carry out all supervisory tasks in his or her absence.

» **Network Connection Requirements:**

1. Provision of an Internet connection for the center.
2. Provision of computers for all departments (reception, health education, laboratory, consultation clinic).
3. Provision of a barcode printer for the reception and laboratory departments.
4. Provision of a barcode reader for the reception and laboratory departments.



# References

## REFERENCES

1. Epidemiology of sickle cell disease in Saudi Arabia. Wasil Jastaniaha, b. 3, May-Jun 2011, Vol. (31).
2. Distribution of hemoglobinopathy disorders in Saudi Arabia based on data from the premarital screening and genetic counseling program, 2015–2011. S.Alsaeed, Author links open overlay panelEman. 1, s.l. : Journal of Epidemiology and Global Health, 2018, Vol. (7).
3. What causes Thalassemias . s.l. : NHLBI, 2016.
4. Thalassemia. <https://www.mayoclinic.org/diseases-conditions/thalassemia/symptoms-causes/syc20354995->. [Online] Newsletter: Mayo Clinic Health Letter. [Cited: 2019 ,6 10.]
5. Mayo clinic . [Online] 2017 ,27 10. [Cited: 2019 ,6 10.] <https://www.mayoclinic.org/diseases-conditions/hepatitis-b/symptoms-causes/syc20366802>.



# Forms

## Statement

I.....National ID .....  
acknowledge that I received health education regarding the measles/mumps/rubella (MMR) vaccine and the importance of vaccination in decreasing the incidence of those diseases as well as their repercussions on my health and the health of my children in the future.

I was also made aware of the expected benefits from receiving the vaccine, with the will of Allah, and its contraindications; and I acknowledge the following terms:

- I must avoid becoming pregnant for at least one month after receiving the vaccine.
- Women who are pregnant or think they may be pregnant must delay receiving the vaccine until after delivery.

By signing this document, I acknowledge that I have read, understood, and agree with all of the above.

Name:.....

Signature:.....

Form 1: Agreement to Take the MMR Vaccine and Avoid Pregnancy for One Month

## Statement of Refusal

I..... National ID .....

acknowledge that I received health education regarding the measles/mumps/rubella (MMR) vaccine and the importance of vaccination in decreasing the incidence of those diseases as well as their repercussions on my health and the health of my children in the future.

I was also made aware of the expected benefits from receiving the vaccine, and the main terms and contraindications.

After reviewing the above mentioned, I refuse to take the vaccine on my own responsibility, and by signing this document, I acknowledge that I have read, understood, and agree with all the above.

Name:.....

Signature:.....

Form 2: Statement of Refusal to Take the MMR Vaccine

## Premarital Screening Report (Private)

Name	Father	Grandfather	Family	Sex	Age
Mobile			National ID		

### Infectious Disease Screen (HIV, Hepatitis B/C)

HIV/AIDS	<input type="checkbox"/> Affected	<input type="checkbox"/> Unaffected
Hepatitis B	<input type="checkbox"/> Affected	<input type="checkbox"/> Unaffected
Hepatitis C	<input type="checkbox"/> Affected	<input type="checkbox"/> Unaffected

### Hereditary Disease Screen (Sickle Cell Anemia, Thalassemia)

<input type="checkbox"/> Compatible <input type="checkbox"/> Incompatible due to the presence of: <input type="checkbox"/> Sickle cell anemia <input type="checkbox"/> Thalassemia
Diagnosis: ..... .....

Name of Physician: ..... Signature: ..... Date: / / 14 H

### Consent Statement for Positive Cases

<input type="checkbox"/> I consent to informing the other party of the laboratory test results
<input type="checkbox"/> I agree to finalizing the marriage and having all the screening tests and long-term results explained to me Name: ..... Signature: ..... Date: / / 14 H
<input type="checkbox"/> I agree to finalizing the marriage and having all the screening tests and long-term results explained to me Name: ..... Signature: ..... Date: / / 14 H

### Attachments:

<input type="checkbox"/> Laboratory Test Results	<input type="checkbox"/> Copy of Premarital Screening Certificate
--	---



Region/City:.....

Hospital/Center:.....

وزارة الصحة  
Ministry of Health

## Hepatitis B Vaccination Report

This part is to be filled out by the Consultation Clinic

The citizen: .....Age: .....National ID:.....  
wishes to marry a partner who is hepatitis B positive, and accordingly has received the first and second doses of the vaccine for disease prevention, on condition that that he/she will commit to completing the third dose on the designated date.

Name of Physician: ..... Signature: ..... Date: / /14 H

This part is to be filled out by the Preventive Medicine (Vaccination) Clinic

This is to inform you that the above mentioned has received

First dose Date ....../....../.... Signature: .....

Second dose Date ....../....../.... Signature: .....

And has pledged to complete the third dose Date ....../....../.... Signature: .....

This part is to be filled out by the citizen

### Undertaking

I the citizen: .....wish to marry a partner who is hepatitis B positive, and pledge to complete the third dose of the vaccine at the designated date and to follow and implement the medical recommendations and instructions I was given.

Full Address .....

Mobile number.....

National ID number .....

Name: ..... Signature: ..... Date: / /14 H

**Important: This form is to be kept in the file of each party after issuance of the certificate.**

## Referral of Patient with Hepatitis C for Treatment

### From the Medical Consultation Clinic to the Hepatitis Treatment Clinic

Assalamu alaikum wa rahmatullahi wa barakatuhu

We refer to you the citizen:..... Age:..... National ID: .....  
diagnosed with hepatitis C for treatment.

Please accept my kindest regards

Name of physician:	Date:	Signature and stamp:
.....	.....	.....

### From the Hepatitis Treatment Clinic to the Medical Consultation Clinic

Assalamu alaikum wa rahmatullahi wa barakatuhu

We would like to inform you that the patient mentioned above has received treatment for  
Hepatitis C and is cured.

The PCR test result is attached

Please accept my kindest regards

Name of physician:	Date:	Signature and stamp:
.....	.....	.....

- **Attachments:** PCR test result post treatment.
- **Important:** This form is to be kept in the patient's file after issuance of the certificate.



Region/City:.....

Hospital/Center:.....

وزارة الصحة  
Ministry of Health

### Acknowledgment Statement for the Marriage of Two Parties Who are HIV Positive

#### » Statement for the male party:

I, the person who is HIV positive and planning to get married to an HIV positive partner, acknowledge that I received expert explanation and am fully aware of the risks associated with HIV infection and methods for prevention, without any confusion or misunderstanding; and based on my belief in the decree and will of Allah and my sense of responsibility toward the other party, I will comply with all measures required to prevent the affliction of harm to the other party and have healthy children by following the educational recommendations and measures for prevention and treatment determined by the health authorities and which I was given expert education on; and that in the event of my negligence or failing to comply or deliberately causing harm, I am subject to punishment as the laws dictate.

<b>Name:</b>		<b>National ID:</b>	
<b>Contact Number:</b>		<b>Date:</b>	
<b>City:</b>		<b>National Address:</b>	
<b>District:</b>		<b>Zip Code:</b>	
<b>Additional Number:</b>		<b>Signature:</b>	

#### » Statement for the female party:

I, the person who is HIV positive and planning to get married to an HIV positive partner, acknowledge that I received expert explanation and am fully aware of the risks associated with HIV infection and methods for prevention, without any confusion or misunderstanding; and based on my belief in the decree and will of Allah and my sense of responsibility toward the other party, I will comply with all measures required to prevent the affliction of harm to the other party and have healthy children by following the educational recommendations and measures for prevention and treatment determined by the health authorities and which I was given expert education on; and that in the event of my negligence or failing to comply or deliberately causing harm, I am subject to punishment as the laws dictate.

<b>Name:</b>		<b>National ID:</b>	
<b>Contact Number:</b>		<b>Date:</b>	
<b>City:</b>		<b>National Address:</b>	
<b>District:</b>		<b>Zip Code:</b>	
<b>Additional Number:</b>		<b>Signature:</b>	

#### » Certification of the Consultation Physician

The parties signed above have been educated on all treatment and prevention measures required to prevent the infliction of harm to themselves and their contacts. In addition, they were assigned to the proper center for periodic follow-up of their state of health and to provide both parties with all treatment and prevention services.

**Name of Physician:**.....**Signature:** ..... **Date:** / /14 H

☐ Original is kept in both affected persons' files.

**Health Establishments Stamp**

☐ Each party is given a copy.

☐ Each party signs the form for receiving a copy of the rights for persons living with AIDS.

**Dear applicant..**

We at the Healthy Marriage Program are here to support you with all the information you need to ensure you having a stable marriage and healthy family, Allah willing, and the reason for recommending that you choose **a partner who is genetically compatible with you** is to help ensure that you have healthy children (free from hereditary blood diseases), Allah willing, and a better social life.

Striving to improve the health of the population in the Kingdom of Saudi Arabia and reduce the prevalence of hereditary diseases, we wish to add your family to the healthy families free of hereditary diseases to achieve a better social life.

**We advise you to take your time in thinking about what you decide regarding this genetically incompatible marriage and about your future and the future of your children and family.**

» **First Decision:**

If you have decided to cancel the marriage, we congratulate you on your sensible decision and wish you the best with another partner who is compatible with you. Note that you need not come to the center or hand in your decision at the consultation clinic.

» **Second Decision:**

In case you have made the decision to go ahead and finalize the marriage, we ask you to rethink your decision once more, and to read the statement on the next page and have it signed by yourself and your parents, or whoever is acting in their role, then bring all of your and your partner's statements to the reception at the consultation clinic in order to receive your certificate of incompatibility.

Name:	Date:	Signature:

## Acknowledgment of Risk Form

**This form is for men planning to go ahead and finalize an incompatible marriage**

The Ministry of Health represented by the Healthy Marriage Program endeavors to improve quality of life through its youth and children. From this standpoint, we are keen on making the Kingdom of Saudi Arabia free of hereditary diseases that can be avoided through marriage between genetically compatible partners.

You have been given this form to ensure your knowledge of the possible consequences and harms you may face as a result of your genetically incompatible marriage, and we hereby urge you to rethink your decision to go ahead with this marriage.

We know that arrangements and payments have probably already been made in preparation for your marriage, but remember that payments can be compensated and ties between families can change, but what remains is your happiness and future; and you alone hold the decision regarding your happiness.

We understand how difficult this situation may be, and want to assure you: You are not alone. Over half of the incompatible couples applying for marriage in the Kingdom accept the result and cancel their marriage, because they know that climbing down the bottom steps of a ladder is better than falling from the top, and that Allah has given you medical science so that you can know the risks this marriage poses for your children, and that He will compensate you.

In deciding to choose a compatible marriage partner, you are contributing to the building of a healthy, happy family and, subsequently, a healthy and sound generation, because your sound family is one of the pillars of this community; and your marriage decision ultimately affects the health, economic, and developmental future of the population in the Kingdom.

**After reading the above, should you decide to go ahead and finalize the incompatible marriage in spite of your knowledge of its harms, please agree to the following:**

**Acknowledgment of the harmful effects of my decision on the future of my family and city**

☐ **I, the person signing below, acknowledge that by deciding to finalize this incompatible marriage I may be choosing an unhealthy future for my children, family, and city.**

When two genetically incompatible persons decide to marry, as in the case with you and your partner, they are putting their children at risk for having one of the following two hereditary blood diseases:

- 1. Sickle cell anemia:** A severe anemia transmitted genetically from parents who are incompatible to their children. It affects child growth and causes severe acute pain in addition to requiring frequent blood transfusions and intravenous infusions and may lead to death at a young age because of severe complications.
- 2. Thalassemia/Mediterranean anemia:** A severe anemia transmitted genetically from parents who are incompatible to their children. It requires frequent blood transfusion leading to deformities and complications and possibly death at an early age.

**Seeing your child suffer his or her whole life will not be easy for you. please rethink your decision.**

After reading the above, should you decide to go ahead and finalize the incompatible marriage in spite of your knowledge of its harms, please confirm the following:

**Acknowledgment of the possibility of having children affected by the disease**

- ☐ I, the person signing below, acknowledge the possibility that I may have children with hereditary blood diseases, and acknowledge the danger those diseases pose and pains they may cause my children.

The risks and harm resulting from your genetically incompatible marriage are not limited to health consequences to your children, should they be born with the disease, **but extend to your own psychological, physical, and social health.**

**Remember: the pain, strain, and cost**

of seeing your children suffer pain, the continuous visits to various hospital and health center emergency rooms for the frequent blood transfusion your affected child will need, and the financial implications and travel abroad for treatment, in addition to the psychological and social harms to your family including the impact on social life and parental performance at work.

After reading the above, should you decide to go ahead and finalize the incompatible marriage despite its harms, please confirm the following:

**Understanding the psychological and social harms**

- ☐ I, the person signing below, acknowledge that by deciding to go ahead and finalize this incompatible marriage, I may have children who are ill and that this may impact the lives of my children and family as well as my own psychological and social stability.

**Name:** ..... **Signature:** ..... **Date:** / /14 H

Form 8: Acknowledgment of Risk Form for Getting Married

## **Acknowledgment of Risk for the Parents or Persons Acting in their Role**

### **In the Name of Allah, the Beneficent, the Merciful**

After your son has completed premarital screening, the results show that he is not genetically compatible with the other party, and this raises the possibility of having children with hereditary blood diseases, which can cause your children and grandchildren pain and suffering from treatment and the serious complications of the disease.

**You son is not the only person to experience this situation; many couples applying for marriage in the Kingdom have been found to be incompatible, but over half of them have followed their physician's recommendation and canceled the marriage, because they know that in deciding to choose a compatible marriage partner, they will have healthy children, Allah willing.** We seek with this letter to gain your support **in making the decision to cancel your son's marriage**, and that you take part in making the right decision. We pray that Allah compensates them with other partners who are compatible with them to have healthy families.

Remember that payments that have been made for wedding preparations can be compensated and ties between families can change, **but what remains is the health and happiness of your children and grandchildren.**

After reading the above, should you support the **decision to cancel the marriage**, please choose the following:

#### **Support**

- ☐ I, the person signing below, support my son in his decision to not finalize the marriage, and by doing so would be participating in protecting his family from hereditary diseases and in building a strong, healthy generation in the Kingdom.

Date ....../....../....

Signature: .....

Father or person acting in his role

Mother or person acting in her role

After reading the above, should you support the incompatible marriage in spite of its harms, please agree to the following:

#### **Support**

- ☐ I, the person signing below, acknowledge that my son's finalization of his incompatible marriage will increase the risk of having children with hereditary blood diseases, and by doing so I may be participating in the spread of hereditary diseases in the Kingdom.

Date ....../....../....

Signature: .....

Father or person acting in his role

Mother or person acting in her role

Name: .....

Date:.....

To make this group safe, supportive, and productive, and give its members the best possible experience, it is important that every member commits to attending the group's activities to gain the maximum benefit.

Please agree to the following commitment:

- **Attendance:**

If I decide to attend any of the group's meetings or activities, I will try to be present at the specified place and time, because that will increase effectiveness and benefit.

- **Interaction:**

This means effective listening and sharing your ideas, feelings, and reactions in a respectful manner. The more I interact and participate in the group the more I benefit from it. This will also improve how I feel toward my fellow group mates and the mutual feelings of being safe, confident, and supportive.

- **Confidentiality:**

I understand that in focus groups, members are expected to maintain the confidentiality of other members and, consequently, understand that any information about team members revealed during meetings is confidential and will not be revealed by me.

**I also understand that the group leader cannot reveal any information about me without my written consent except in circumstances that obligate him or her to do so by law, which are as follows:**

- ☐ If I pose a danger or threat to myself or others.
- ☐ If there are signs of severe mistreatment or abuse toward me as a child or elderly person or person requiring care (being disabled for example).
- ☐ If I were to be severely injured or suffer an acute health crisis while attending a meeting or activity.

If I begin to experience unfamiliar symptoms or develop sudden deterioration of my health, I will inform the group counselor immediately or contact:

**997 Unified number for emergencies**

**937 Unified number for medical consultations**

Signature: .....

Focus Group:.....Group Counselor:.....

Region:.....PHC/Hospital: .....

#	Name	Sex	Age	Contact Number
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				

Manager of the PHC /hospital health education department:.....

Signature:.....



Region/City:.....

Hospital/Center:.....

## Premarital Screening Report

### 1. First Party: (The Citizen)

Full Name:

Sex:

National ID number:

Date of birth:

Mobile number:

#### » Infectious Disease Screening Results

- ☐ Unaffected
- ☐ Affected by the following diseases:
- ☐ HIV
- ☐ Hepatitis B
- ☐ Hepatitis C

#### » Hereditary Disease Screening Results

- ☐ Unaffected
- ☐ Affected by the following:
- ☐ A carrier for the following:
- ☐ Sickle cell anemia
- ☐ Beta thalassemia

### 2. Second Party: (The Non-Saudi)

Full Name:

Sex:

Iqama/passport number:

Date of birth:

Nationality:

Mobile number:

#### » Infectious Disease Screening Results

- ☐ Unaffected
- ☐ Affected by the following diseases:
- ☐ HIV
- ☐ Hepatitis B
- ☐ Hepatitis C
- ☐ Syphilis

#### » Hereditary Disease Screening Results

- ☐ Unaffected
- ☐ Affected by the following:
- ☐ A carrier for the following:
- ☐ Sickle cell anemia
- ☐ Beta thalassemia
- ☐ G6PD
- ☐ Hemophilia

#### Dicision:

- Both parties are NOT Affected by diseases included in the Saudi Council of Ministers Resolution **No.156**
- One or both parties are either Affected or Carrier of diseases included in the Saudi Council of Ministers Resolution **No.156**

Physician:..... Signature: ..... Date ....../....../....

Center manager:..... Signature: ..... Stamp



# APPENDIX

## Abbreviations

<b>CBC</b>	Complete Blood Count
<b>EDTA</b>	Ethylene Diamine Tetra-acetic Acid
<b>FL</b>	Femtolitre
<b>Hb</b>	Haemoglobin
<b>HPFH</b>	Hereditary Persistence of Fetal Haemoglobin
<b>HPLC</b>	High Performance Liquid Chromatography
<b>IDA</b>	Iron Deficiency Anemia
<b>MCV</b>	Mean Corpuscular Volume
<b>MCH</b>	Mean Corpuscular Hemoglobin
<b>Pg</b>	Picogram
<b>RBC count</b>	Red blood Cell count
<b>RDW</b>	Red blood cell Distribution Width

## » Legislations and Resolutions Regulating the Healthy Marriage Program:

- Legislations and resolutions are a fundamental element to goal achievement and an inlet to the drafting of strategies and goals and definition of activities in cooperation and coordination with related industries in a comprehensive, integrated system.
- Council of Ministers Resolution no. 4/B/54504 dated 1424/11/15H proposing mandatory premarital screening, in addition to Royal Decree no. /110/ proposing the development of the Premarital Screening Program to become the Healthy Marriage Program based on studies and knowledge of the risks of hereditary diseases and some of the infectious diseases and their serious implications on the individual, family, and community. The resolutions were issued in several stages based on the proceedings of the committee formed by Royal Decree no. 1489 /7 /M dated /8 /20 1416H on the required health regulations for marriage.

## » Stages of the Issuance of Resolutions and Decisions

- **First Stage:** 1418 – 1416H Council of Ministers Resolution no. 156/ dated /1418H on the issuance of a medical screening certificate for persons wishing to marry a non-Saudi party and prohibition of the marriage to a party who is affected by or a carrier for the defective genes of hereditary blood diseases or affected by one of the infectious diseases; along with the establishment of public information programs to educate citizens and studying of the possibility of its implementation on all Saudi citizens.
- **Second Stage:** 1423–1418H Council of Ministers Resolution no. 5/ dated/ 1423H on the organization of awareness campaigns explaining the benefits of premarital screening, hastening the preparation of laboratories and training of personnel, performing premarital screening for interested Saudi citizens, maintaining full confidentiality and in coordination with the Ministry of Justice in order for marriage officials to explain the benefits of premarital screening; and designating the required funds for this purpose.
- **Third Stage:** 1424 – 1423H Council of Ministers Resolution no. 4/ B/ 54504 dated 1424 /11 /15H proposing that premarital screening is made obligatory before marriage, while permitting the freedom to finalize the marriage regardless of screening results, and that this shall take effect from 1425/1/1H; in addition to holding awareness campaigns for citizens on the benefits of screening.

- **Fourth Stage: 1429 – 1424 H**

- Issuance of Assisting Deputy Minister for Preventive Health circular no. 352 / 64 dated 1427/4/10H canceling alpha thalassemia screening from the Premarital Screening Program tests.
- Issuance of resolution no. /110/ dated 1429 /4 /8H approving the development of the Premarital Screening Program to become the Healthy Marriage Program with the addition of infectious diseases.

- **Fifth Stage:** 1429H Ministry of Health circular no. 64/931 dated 1429 /7/4H on prohibiting the issuance of premarital screening certificates for persons proven to be infected with the virus causing acquired immunodeficiency (AIDS) in cases where the party wishes to marry an uninfected party, and referring the infected party to AIDS treatment centers in the region for required procedures and follow-up; this was based on resolution no. /232/ dated 1429 /2/27H issued by the Council of Senior Scholars and the General Presidency of Scientific Research and Exile ruling the prohibition of marriage between a party with AIDS and one who is unaffected, considering this harm, and harm must be removed in following with the Hadith of Prophet Muhammad, peace be upon him, “There should be neither harming nor reciprocating harm.”

» **Additional Circulars and Resolutions:**

- Circular no. 64/1143 dated 1429/8/22H containing:
  - Employing full-time personnel for the Healthy Marriage Program, especially a regional program coordinator.
  - Employing permanent physicians to work in the medical consultation clinic.
- Circular no. 64/162 dated 1431/2/24H containing:
  - Ensuring full-time employees for the Healthy Marriage Program, especially coordinators for regions and cities.
  - Naming a substitute for the coordinator in case of travel, vacation, or not wanting to work.
  - Forming a work team (coordinator, laboratory technician and specialist, health educator) to draft and follow-up the regional plan.
  - Accrediting an integrated training team.
- Resolution no. 64/163 dated 1431/2/24H on limiting the validity of infectious disease screening tests to six months only.
- Resolution no. 64/15669 dated 1432/4/16H on the assembly of a national committee to supervise the Healthy Marriage Program.

- Circular no. 64/711 dated 1432/9/23H on appointing a full-time laboratory technician for the sole task of entering data of all chemistry and plasma laboratory tests for persons planning to get married into the electronic system.
- Resolution no. 64/253601 dated 1432/11/20H directed to the Ministry of Justice containing approval of the committee composed of the Ministry of Health and Ministry of Justice to exempt from screening men who wish to return to their divorced wives with a new marriage license, if they have children together.
- Resolution no. 1439 - 554026 dated 1439/3/30H ruling the formation of the strategic national committee for hereditary diseases.
- Resolution no. 1440 - 1308042 dated 1440/6/21H ruling the formation of the healthy marriage committee.
- Circular of the Deputy Minister for Public Health dated 16 July 2018 G on prohibiting the reception of patients without national IDs.
- His excellency, the Minister's decision dated 28 January 2019 G on approving Healthy Marriage Day to be on 21 February and activating it annually.
- Royal Decree no. 46032 dated 1441/7/28H approving the regulations on early marriage.

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