



# ***Section 1: What is Hepatitis C?***

**Dr. Faith L. Aikaeli (Médecins du Monde)**  
***Training “Hepatitis C and HR for PWUD”,***  
***26<sup>th</sup>-30<sup>th</sup> Sept. 2016, Dar es Salam, Tanzania***

MÉDECINS D  
LÄKARE I VÄ  
KTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

---

## Learning objective of the session: understanding what hepatitis C virus is



## Outline of the presentation

1. What is Hepatitis?
2. Different hepatitis viruses (A, B, C, D, E)
3. Hepatitis C Virus (HCV)
4. Transmission
5. Epidemiology
6. Genotypes
7. Key messages
8. Exercise

MÉDECINS D  
LÄKARE I VÄ  
DOKTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

## What is Hepatitis?

Hepatitis is a general term for swelling (inflammation) of the **liver**



**Do you know what is the liver and where it is located in the body ?**



## Functions of Liver 1/2

- » **Builds** and converts proteins and sugars
- » **Stores** vitamins, sugars, fats and other nutrients and **releases** into the body when needed.
- » **Removes** waste products and other harmful substances from your blood





## Functions of Liver 2/2

- » **Makes** bile (a liquid that your body uses to digest fat).
- » **Creates** the hormone that helps to produce platelets (which stop bleeding by clotting blood)

MÉDECINS D  
LÄKARE I VÄ  
DOKTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم منظمة أطباء LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة أطباء LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة أطباء LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

Like other organs in the body, the liver is able to regenerate its own tissue.

When the liver is too much damaged it cannot work properly.

Liver damage can lead to life-threatening complications, such as cirrhosis, liver cancer and liver failure.



## Causes of hepatitis:

- » Viral Infections (hepatitis A,B,C,D,E)
- » Non viral causes: Heavy alcohol use, certain medication (paracetamol) or traditional herbs, Leptospira infection, poisons (Aflatoxin, Amanita phalloides (mushroom))

**What do you know about the different hepatitis viruses ?**





## Different hepatitis viruses 1/2

	Mode of transmission	Vaccine	Treatment
<b>Hepatitis A (HAV)</b>	Contaminated food and water	Yes	No
<b>Hepatitis B (HBC)</b>	<b>Contact with infected blood, sexual intercourse, mother to her newborn.</b>	<b>Yes</b>	<b>Yes (long term)</b>
<b>Hepatitis C (HCV)</b>	<b>Contact with infected blood</b>	<b>No</b>	<b>Yes</b>
<b>Hepatitis Delta (HDV)</b>	Must already have hepatitis B. Contact with infected blood, sexual intercourse, mother to her newborn.	Get the hepatitis B vaccine	No
<b>Hepatitis E (HEV)</b>	Contaminated water	No	No



## Different hepatitis viruses 2/2

- » **HBV and HCV** are the two most serious hepatitis viruses : **most deaths from liver disease are caused by chronic HBV and HCV**
- » Some people can clear HBV and HCV without treatment, but HBV and HCV can also become chronic (lifelong) infections and eventually develop serious liver damage, liver cancer and liver failure without treatment.

MÉDECINS D  
LÄKARE I VÄ  
KTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO

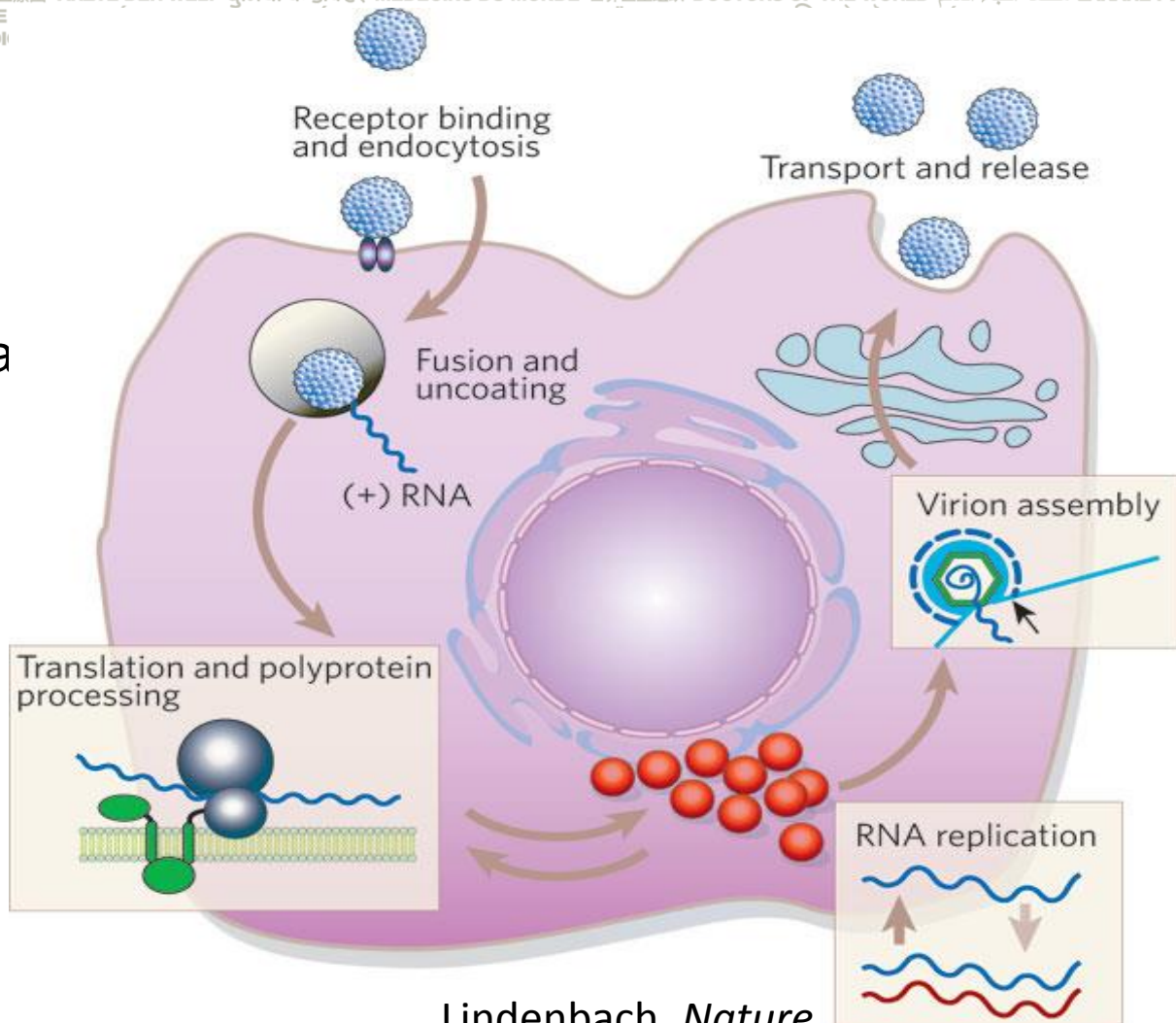


OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

## Hepatitis C virus (HCV)



HCV is a  
**RNA virus**  
of family Flavivirida



Lindenbach, *Nature*,  
2005

MÉDECINS D  
LÄKARE I VÄ  
DOKTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم منظمة أطباء LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة أطباء LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة أطباء LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

## Transmission



**You can get HCV** when blood from a person with HCV infected person enters your body.

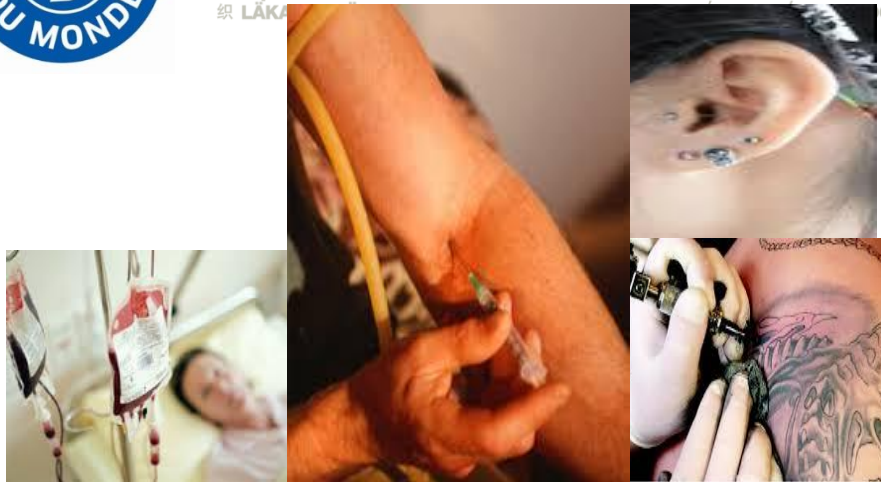


- » Hepatitis C is a **very small virus** (much smaller than HIV), so there is more of it in a drop of blood. Blood can be present even if you do not see it with your eyes.
- » HCV is a very **resistant** virus. It remains detectable in the presence of serum for up to 5 days on inanimate surfaces, and up to 5 months in a liquid environment at lower temperatures. Bleach doesn't kill it.
- » HCV is 10 times more infecting than HIV.

MÉDECINS D  
LÄKARE I VÄ  
KTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKA OKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ



## Most common transmission routes

- blood transfusion
- invasive medical procedures with infected equipment
- **sharing drug use equipment**
- Sharing tattoo and piercing equipment
- sharing personal care items that may have blood on them, such as razors and toothbrushes.





- » HCV transmission through sexual intercourse is **rare** but can occur if blood is involved
- » Hepatitis C is **rarely** passed from a pregnant woman to her baby. About 6 of every 100 infants born to mothers with Hepatitis C become infected with the virus.
- » However, the risk becomes greater if the mother has both HIV infection and Hepatitis C.
- » **You cannot get HCV from:** casual contact (kissing, shaking hands, sharing glasses or eating utensils), mosquitos.





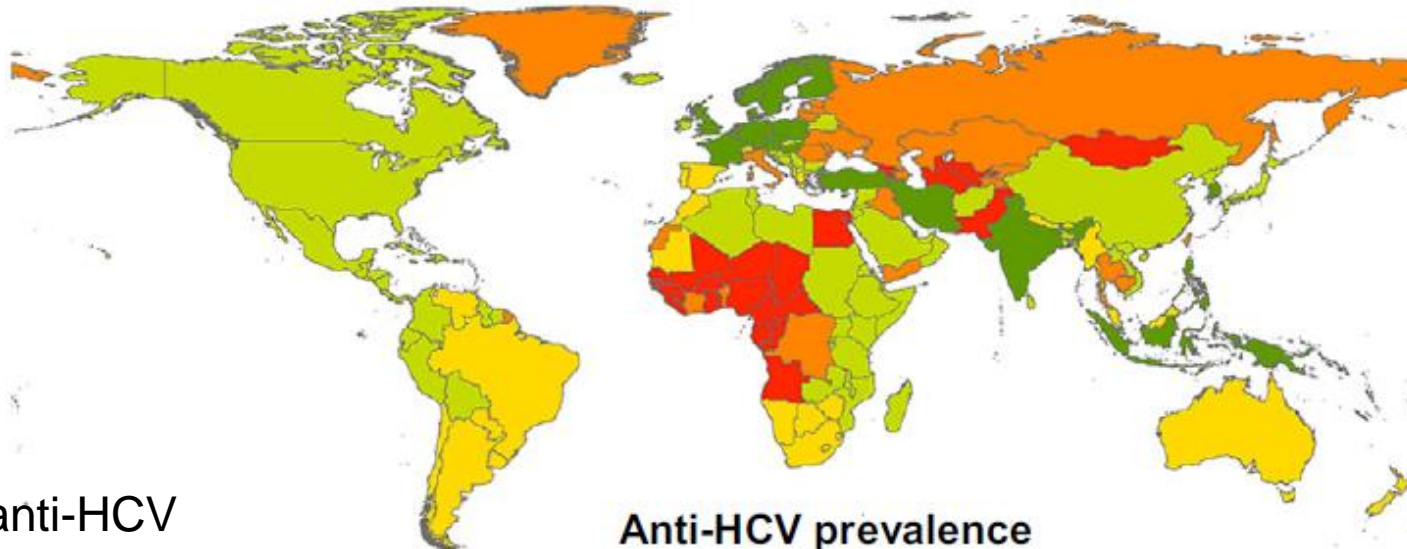


## Epidemiology

- » Globally, an estimated **150 million people are chronically infected with HCV** and the virus causes nearly **700 000 deaths each year.**
- » **Every year between three and four million people are infected** by hepatitis C.
- » Hepatitis C is seen everywhere in the world. Countries with the highest prevalence (>10%) are Egypt, Mongolia and Cameroon.



## Anti-HCV prevalence worldwide



Note : anti-HCV prevalence for countries with regional estimates for countries without reported data.

### Anti-HCV prevalence





## HCV most affected populations

- » **PWID are the group the most affected by Hepatitis C.**
- » Among the estimated 16 million PWID, 67% (10 million people) have been exposed to HCV
- » 5.5 million worldwide **people are co-infected with HIV and hepatitis C**



## HCV Prevalence in Tanzania

- » The overall estimated adult prevalence of HCV is 2.7%
- » The estimated adult prevalence among PWID in Tanzania is 27.7%
- » Among HIV infected adults the estimated HCV prevalence is 18% in the general population.
- » For HIV positive PWID, the estimated HCV prevalence is 70%.

MÉDECINS D  
LÄKARE I VÄ  
DOKTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

## Genotypes

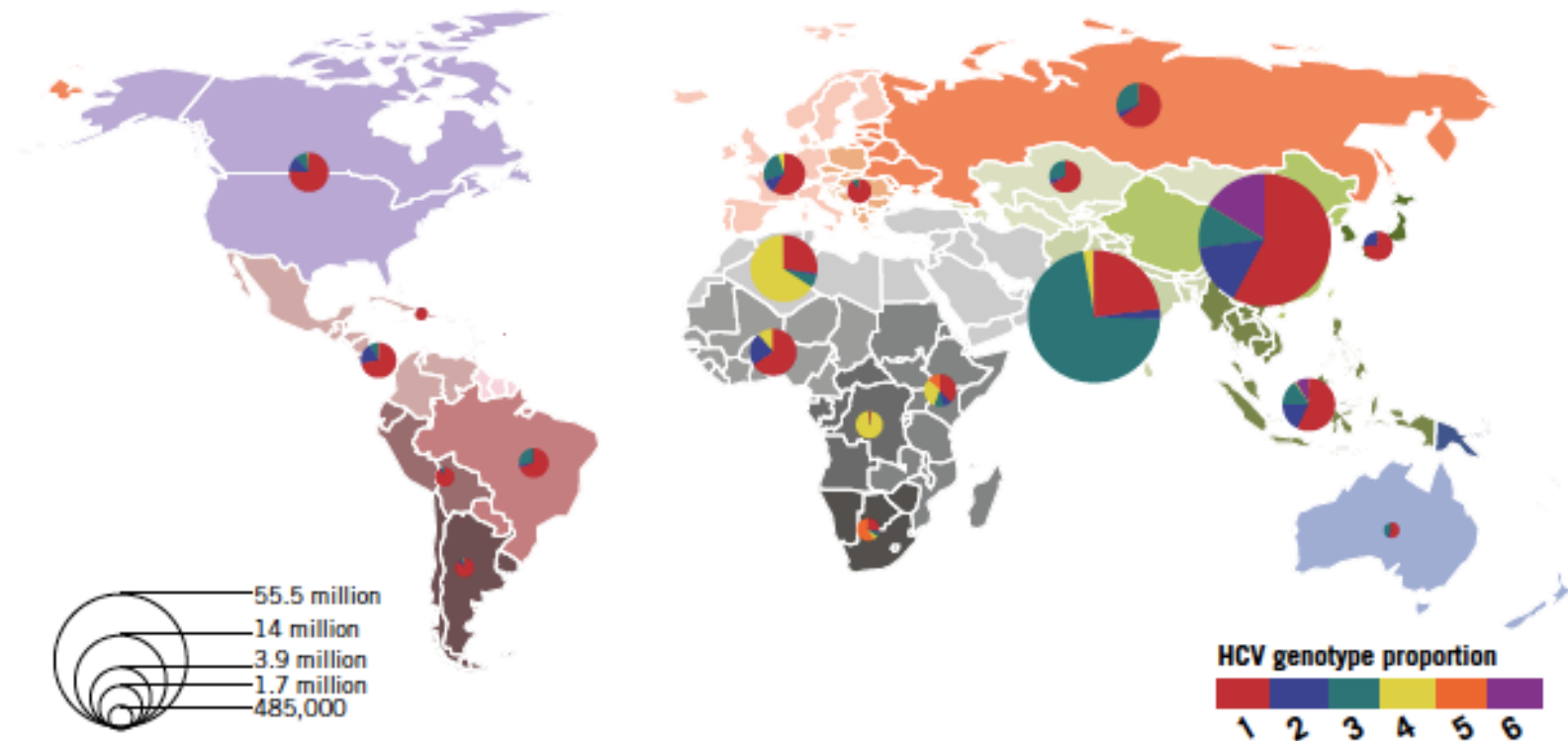
- » The HCV has a highly variable genome, which has been classified into six distinct genotypic groups .

MÉDECINS D  
LÄKARE I VÄ  
DOKTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄ KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医 生组织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ

**FIGURE 2.1** Global distribution of genotypes of HCV (18)





## In Tanzania the genotypic distribution is as follows:

- » Gen 1 : 13.1%
- » Gen 4: 45%
- » Gen 2,3,5 & 6 there is no data available.



## Key messages

- 1) Hepatitis means liver disease, it can be viral or non-viral
- 2) 5 different virus can cause hepatitis (A, B, C, D, E)
- 3) Hepatitis B and C are the most serious
- 4) There is a vaccine for HBV but not for HCV
- 5) There are treatment for HBV and HCV
- 6) Hepatitis C is transmitted through blood contact, it is very resistant and infectious





## Exercise (30 min) :

- » Divide participants into groups of 3 to 5 and ask them to fill the table below (you can draw the table on flipcharts)

	Modes of transmission	Is there a vaccine?	Is there a treatment?
Hepatitis A (HAV)			
Hepatitis B (HBV)			
Hepatitis C (HCV)			
Hepatitis delta (HDV)			
Hepatitis E (HEV)			

MÉDECINS D  
LÄKARE I VÄ  
KTERS VAN D  
VÄRLDEN ME  
生组织 DOCTO



OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS  
S 世界医生组织 MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DO  
ÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医生组织 DOCTORS OF THE WORLD العالم أطباء منظمة LÄKARE I VÄ  
KOSMΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZTE DER WELT दुनिया के डॉक्टर MÉDECINS DU MONDE 世界医  
织 LÄKARE I VÄRLDEN MEDICI DEL MONDO ΓΙΑΤΡΟΙ ΤΟΥ ΚΟΣΜΟΥ DOKTERS VAN DE WERELD MÉDICOS DO MUNDO MÉDICOS DEL MUNDO 世界の医療団 ÄRZ



AGENCE FRANÇAISE  
DE **DÉVELOPPEMENT**

This presentation was produced with the financial support of the French development agency (AFD – Agence Française de développement). The ideas and opinions it contains are those of Médecins du Monde and do not necessarily represent those of AFD.