Viral Hepatitis in Kenya

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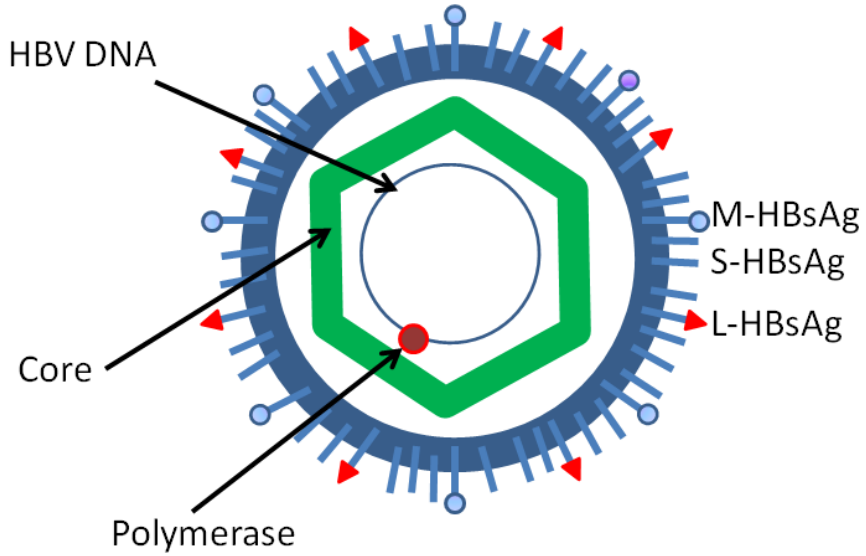
Viral Hepatitis

- Viral Hepatitis grouped into A, B, C, D and E
- Grouping based on genotype and route of transmission
- B (HBV),C (HCV) and D(HDV) blood borne; A (HAV)& E (HEV) through contaminated foods and water
- All cause liver inflammations
- HBV & HCV result in lifelong chronic infections
- HBV results in approx. 2 million deaths per year
- While 350,000-500,000 deaths attributed to HCV annually
- HIV/AIDS deaths reduced from 1.7 million in 2005 to 1.3 million in 2013 while HBV deaths increased three fold from 700,000 in 1990 to approx 2 million currently (***The Lancet: Global, regional, and national incidence and mortality for HIV, tuberculosis, and malaria during 1990-2013: a systematic analysis for the Global Burden of Disease Study 2013. 22nd July 2014)***

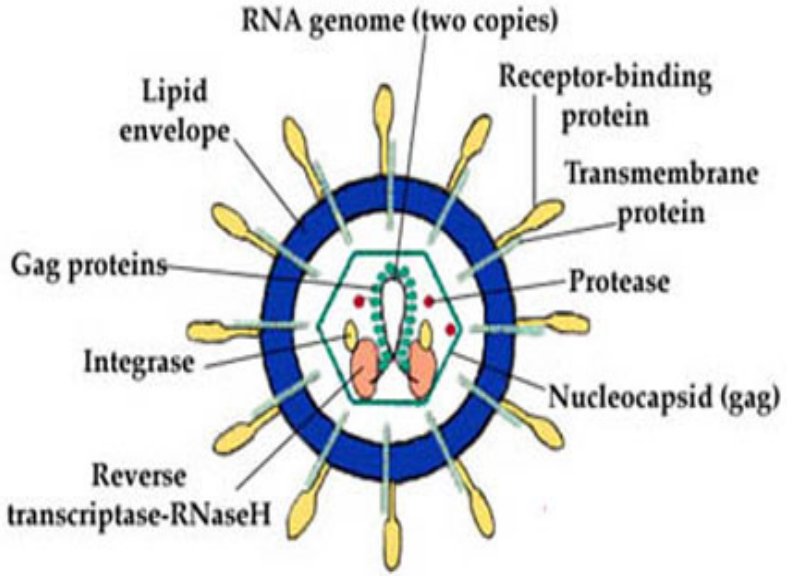
Genomes

HBV



Enveloped Encapsidated
Genome DNA
Approx 3. 2kb

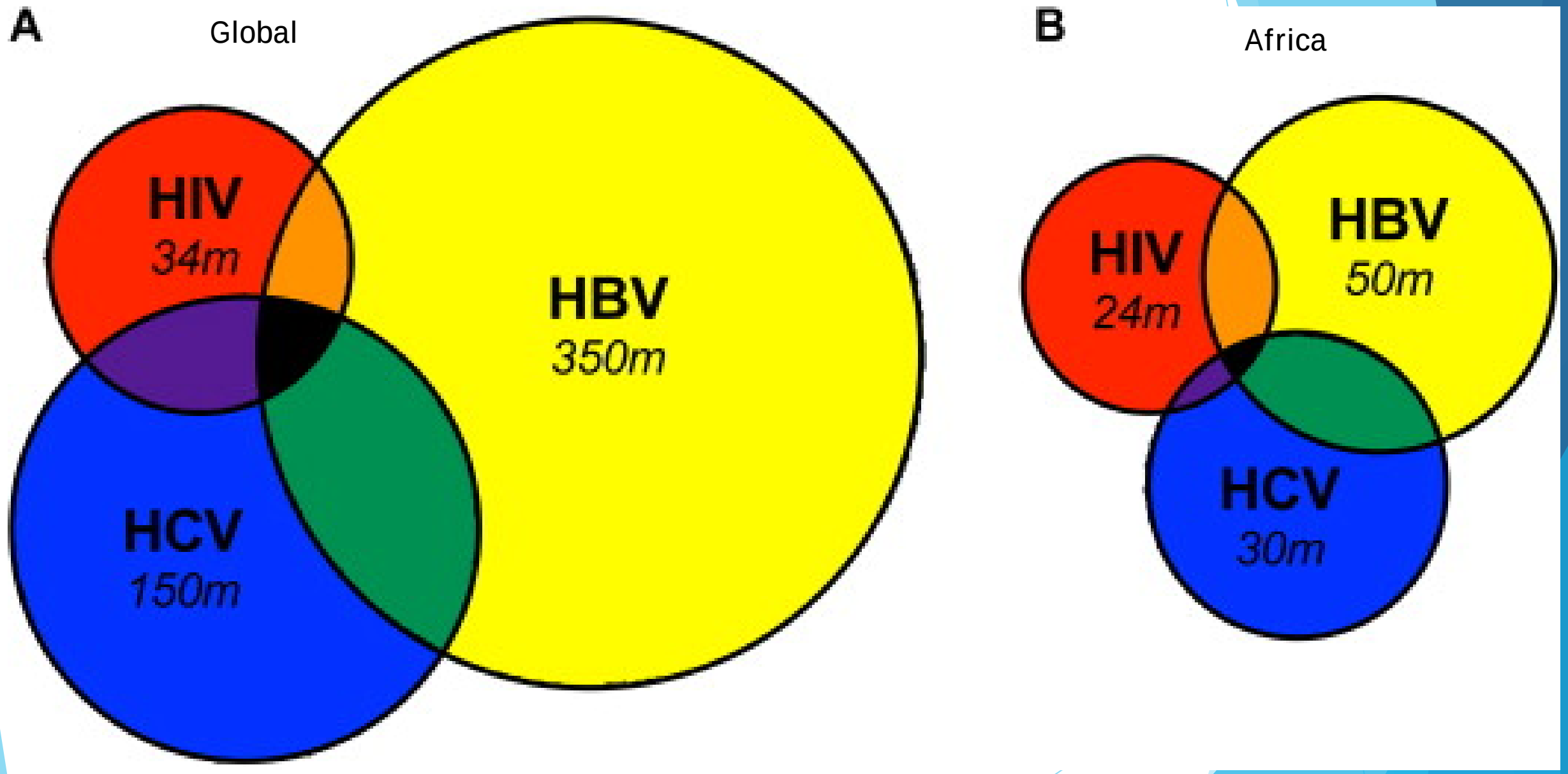
HCV



- Enveloped Virion
- RNA
- Approx 9.6kb

Modes of Transmission

- Direct blood to blood contact
- Sexual transmission
- Contaminated needles
- Mother-to-child transmission
- Scarifications, tattoo’s and piercings


A
Global
HIV
34m
HBV
350m
HCV
150m
B
Africa
HIV
24m
HBV
50m
HCV
30m

HIV/HBV Coinfections

- Increased rate of liver disease
- Higher HBV and HIV Viral loads
- Poor response to antiretroviral treatment
- Decreased HBV seroconversion
- Poor response to HBV theraphy
- Increased risk of hepatoxicity and drug interactions
- High probability of drug reistance

Reduced risk of transfusion-transmitted HIV in Kenya through centrally co-ordinated blood centres, stringent donor selection and effective p24 antigen-HIV antibody Screening S. V. Basavaraju, J. Mwangi, J. Nyamongo, C. Zeh, D. Kimani, R. W. Shiraishi, R. Madoda, J. A. Okonji, W. Sugut, S. Ongwae, J. P. Pitman and L. H. Marum
Article first published online: 19 MAY 2010

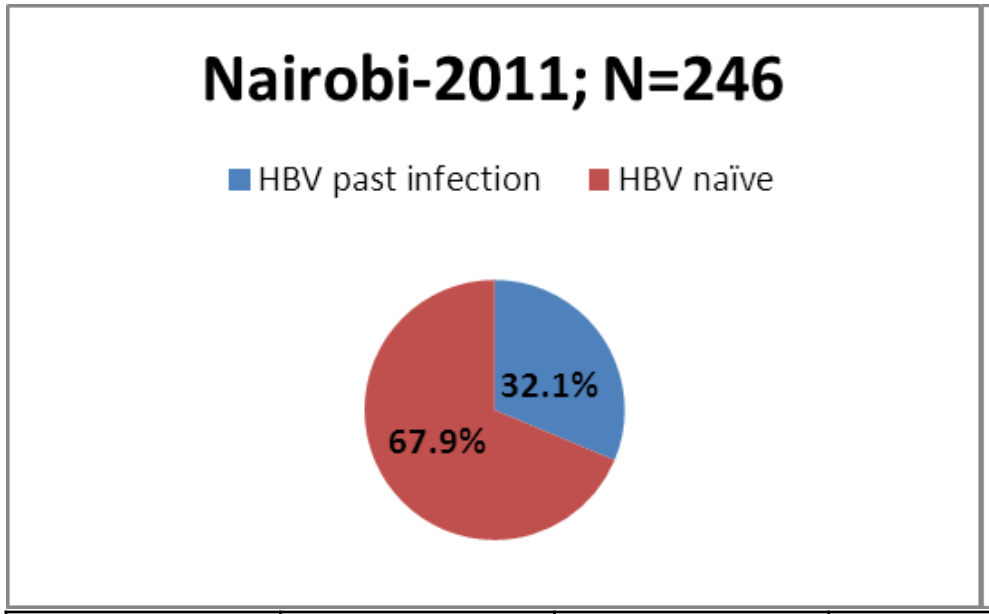
40,657 blood units screened:
HBsAg - 3.3%, anti-HCV – 1%, anti-HIV – 1.2%, syphilis – 0.19%
Hepanostica Bio-Meriex, Netherlands, Murex anti-HCV V.4.0

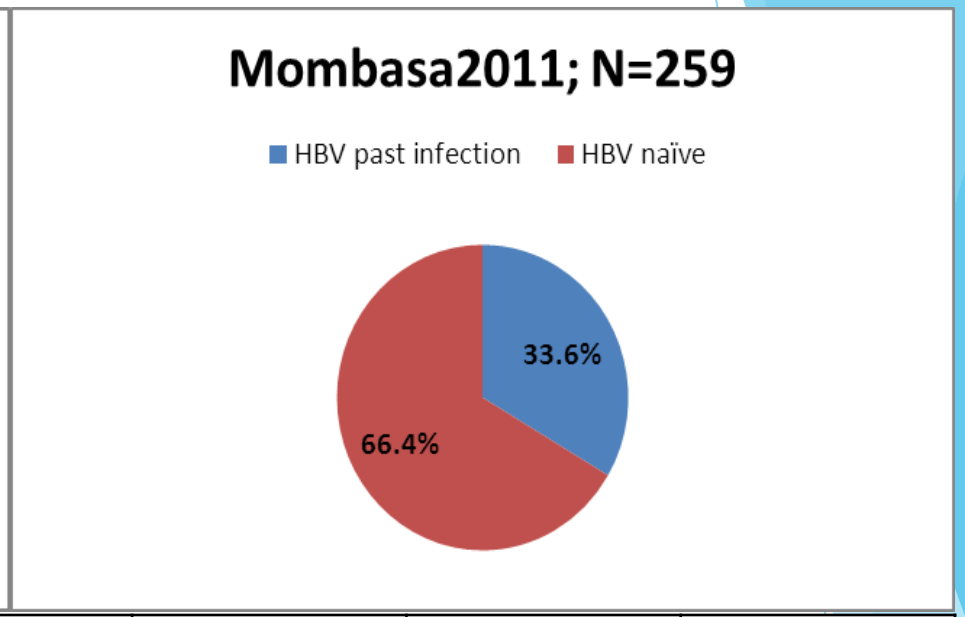
Recently published prevalence data

Year	Author &Year	Pop	Site	n	HBV	HCV	HIV/HBV
	Mwatela RS et al; Plos One 2015	IDUs	Msa	186	-	16.4%	-
	Webale MK *et al* BMC 2015	IDUs	Coast	157	2.3%	-	9.6%
	Kerubo G et al Plos One 2015	Slums	Nrb	418	13.3%	0.7%	4.26%
	Muriuki B et al BMC Res 2013	CCC	Nrb	300	-	-	15.3%
	Kibaya R *et al* Curr HIV Res 2015	IDUS	Msa	72	-	-	13.9%
	Day SL *et al* Plos One 2013	FSW	Msa	159	-	-	6.9%

The “Fever” study

Age Distribution: Mean 31.30; Median 31.00; range 3-71; M:F=45:55





Location and number of samples	Anti-HBs (+) only	Anti-HBs(+)/ Anti-HBc (+) Resolved previous HBV infection	Anti-HBC(+) only	HBsAg(+)	Anti-HCV EIA Ortho v.3.0 (+)	Anti-HCV confirmed by Inno-Lia HCV Score/PCR
Nairobi N=246	7.3%	21.5%	6.1%	4.5%	1.6%	0%
Mombasa N=259	7.3%	25.5%	3.1%	5%	3.5%	0%

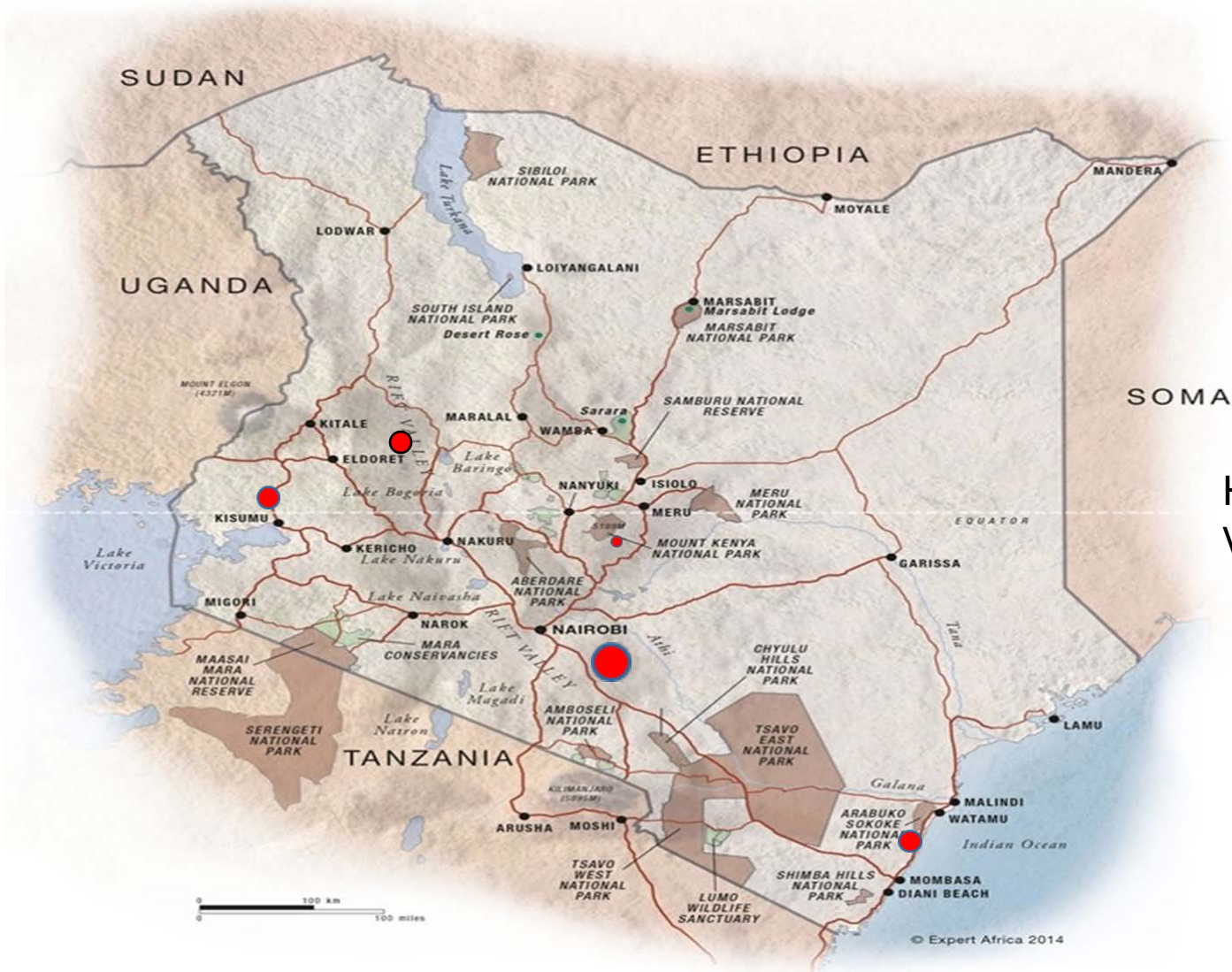
HBsAg/antiHCV markers among blood donors from Nakuru and Eldoret

	Total for 3 mo.	HBsAg /KNBTS	HBsAg/KEMRI	anti-HCV /KNBTS	anti-HCV /KEMRI	anti-HCV confirmed by Inno-Lia HCV Score and PCR
Nakuru	6281	52=0.82%	47(19)=0.3%	7=0.11%	1=0.016%	0%
Eldoret	4299	97=2.25%	84(67)=1.56%	26=0.58%	5=0.12%	0%
Total	10,580	149=1.41%	86=0.81%	33=0.31%	6=0.06%	0%

Blood collection; Dec. 2013, January, February,2014

Patients with liver disease (acute viral hepatitis?)

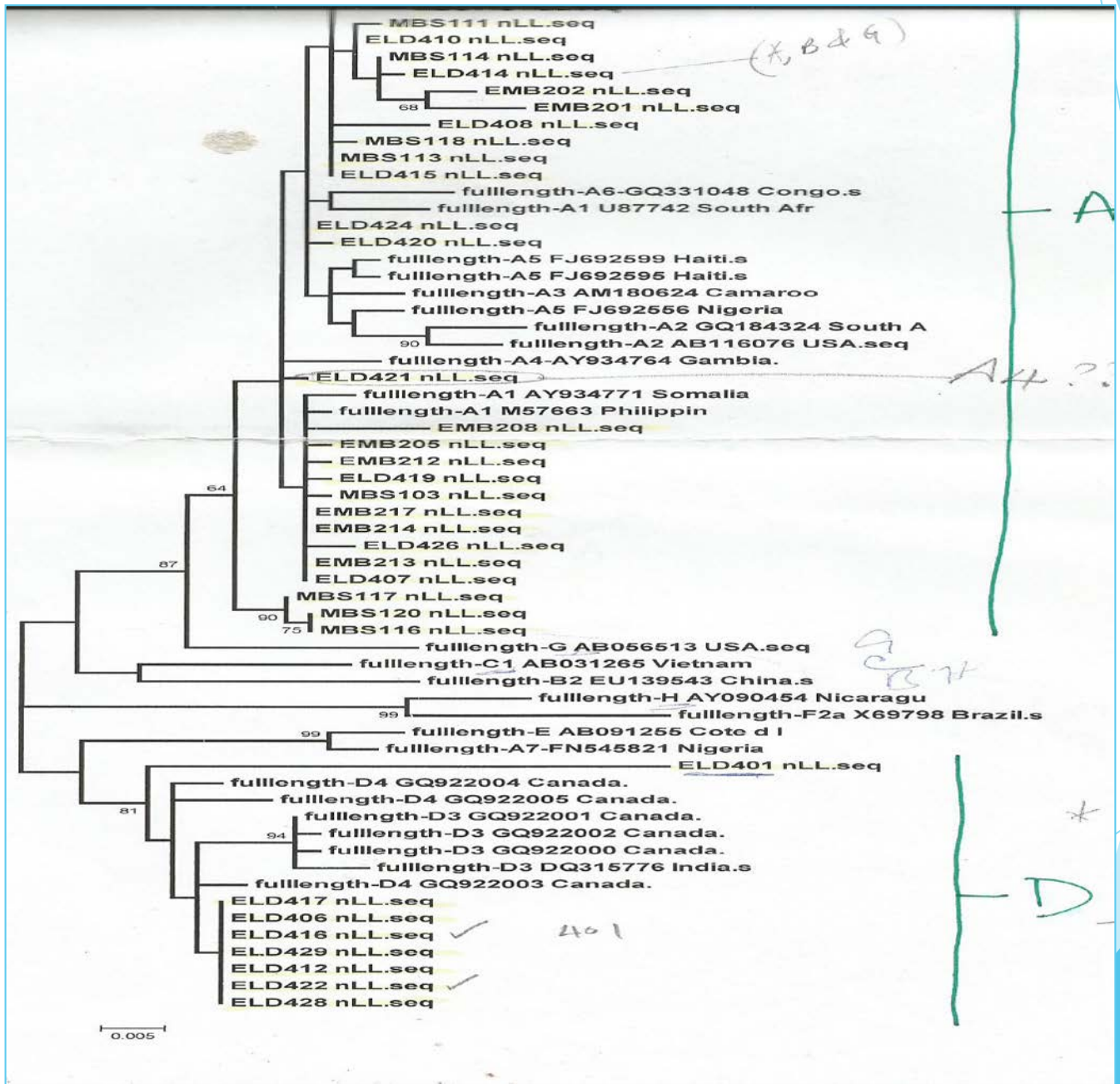
Background: to determine the prevalence and molecular characterization of hepatitis viruses (A-E) among patients with jaundice seeking medical services in Kenya, 395 patients were recruited in four selected hospitals.



Nairobi-254
Kisumu-74
Mombasa-40
Eldoret-27

HBV the most prevalent
Virus 118/395 = 30%

HBV genotypes Kenya



HBV was the most prevalent Hepatitis virus; n=118, 29.87% HBsAg (+)

HBV genotype A1 was predominant (89.6%) followed by D (10.4%).

Region	Mean age (Yrs)	Gender	Surface Seq +	Core Seq +	Genotype A	Genotype D
North West (Eldoret)		F= M=	22	23	16	8
South West (Kisumu)		F= M=	22	21	29	0
Central (Nairobi and environs)		F= M=	29	29	22	1
Coastal region		F= M=	11	7	11	0
TOTAL		F= M=	84	80	90	9

Full genome analysis of HBV/D isolates showed that a third of them belonged to a putative new circulating sub-genotype having > 4% nucleotide divergence from both subgenotypes D7 and D8. Another third were D8 (D/E recombinant) and the rest were genotype D7. All Genotype HBV/D were located in the North Rift region among male patients 40 years of age and above.

ALL CHRONIC HBV INFECTION

World Hepatitis Day 28th July

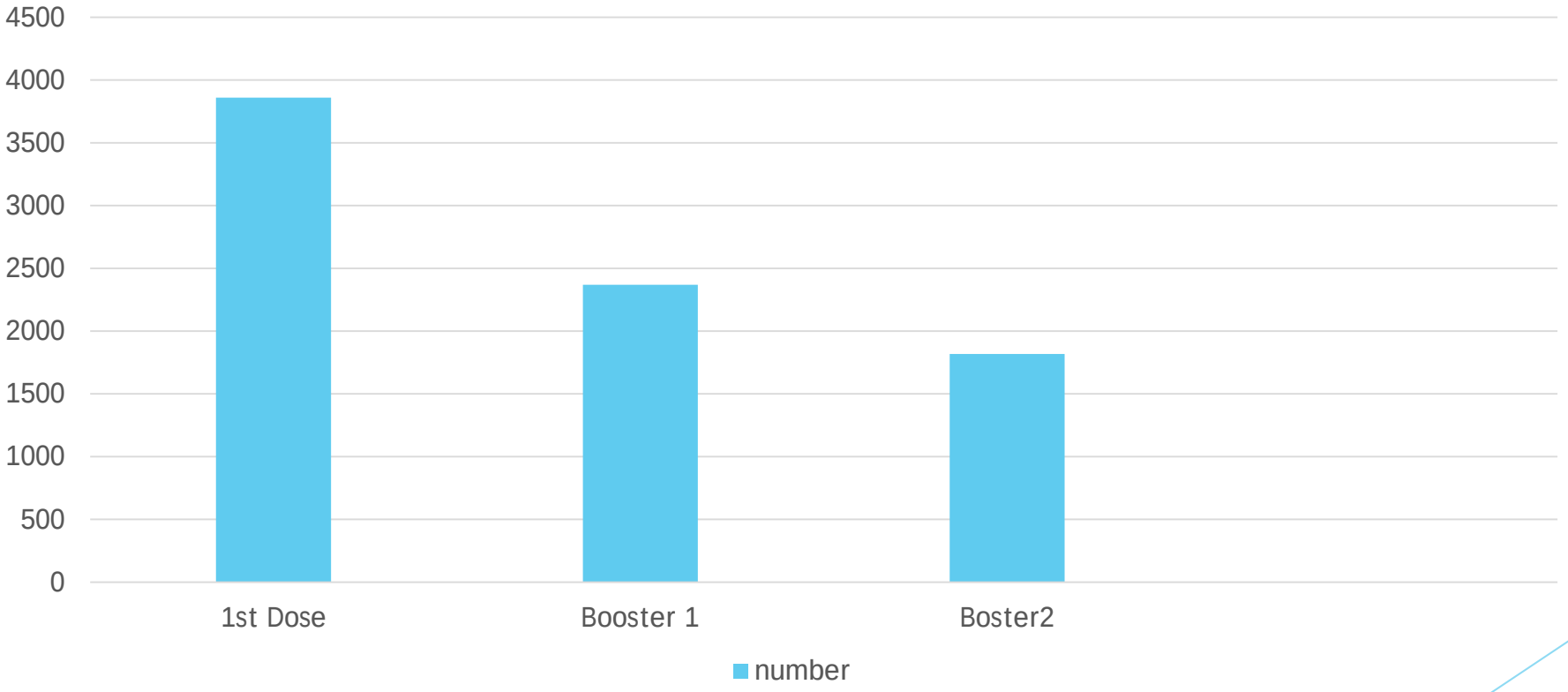
Objectives of committee

- Create awareness on viral hepatitis
- Provide testing and HepB vaccination
- Institute national prevalence studies for Viral hepatitis
- Lobby policy makers and increase visibility of viral hepatitis
- Support development of local guidelines for prevention, treatment and management of viral hepatitis
- Develop networks and collaborations between groups working on viral hepatitis

World Hepatitis Day (2014)HBV Screening

CENTRE	POP ULATION SAMPLED	HBV (POSITIVE
LOCO (NAIROBI)	806	27 (3.35%)
UG (ELDORET)	269	5 (1.86%)
RIRUTA (NAIROBI)	916	14 (1.53%)
MTRH (ELDORET)	713	8 (1.12%)
REALE (ELDORET)	475	5 (1.05%)
HCWs (ELDORET)	607	5 (0.8%)
M/LUCY (NAIROBI)	653	4 (0.61%)
CHEPKANGA (ELDORET)	25	0 (0%)
IMANI (ELDORET)	50	0 (0%)
CEDAR (ELDORET)	20	0 (0%)
OVERALL	3927	63 (1.6%)

HBV Vaccination follow-ups



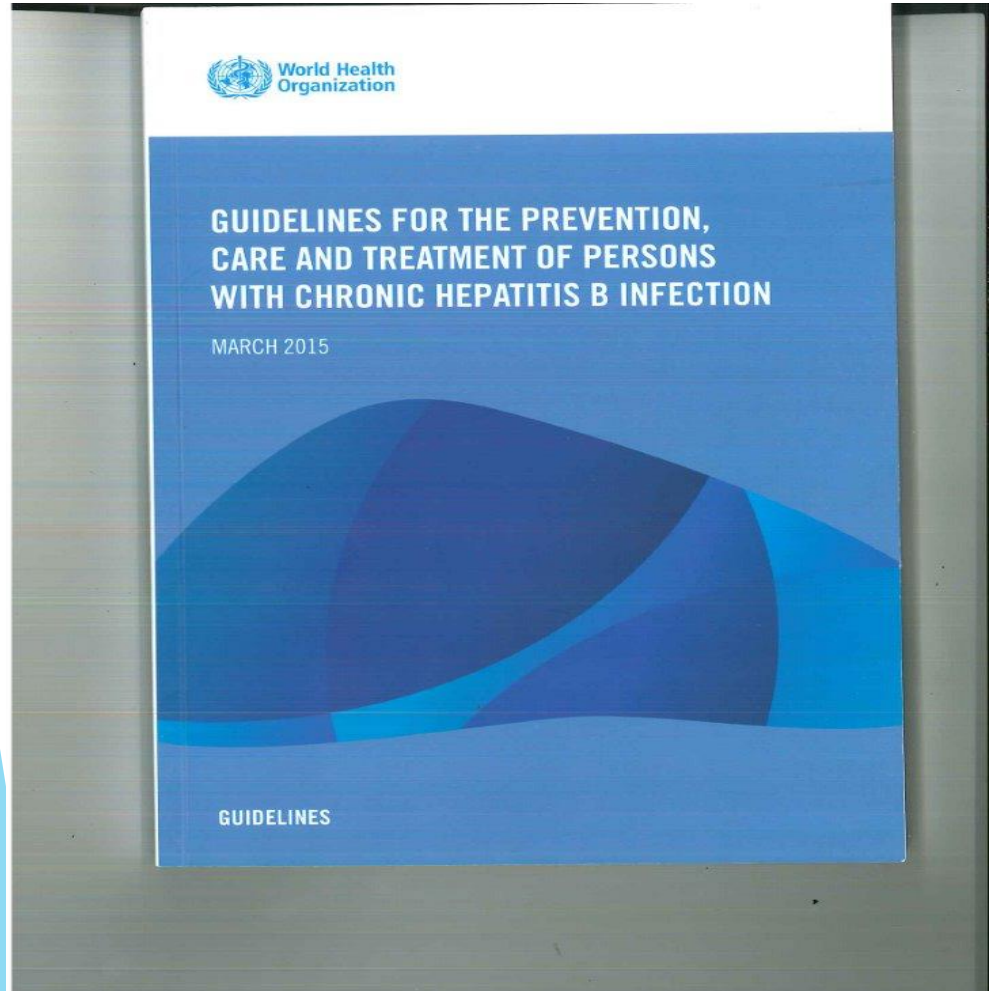
Observations

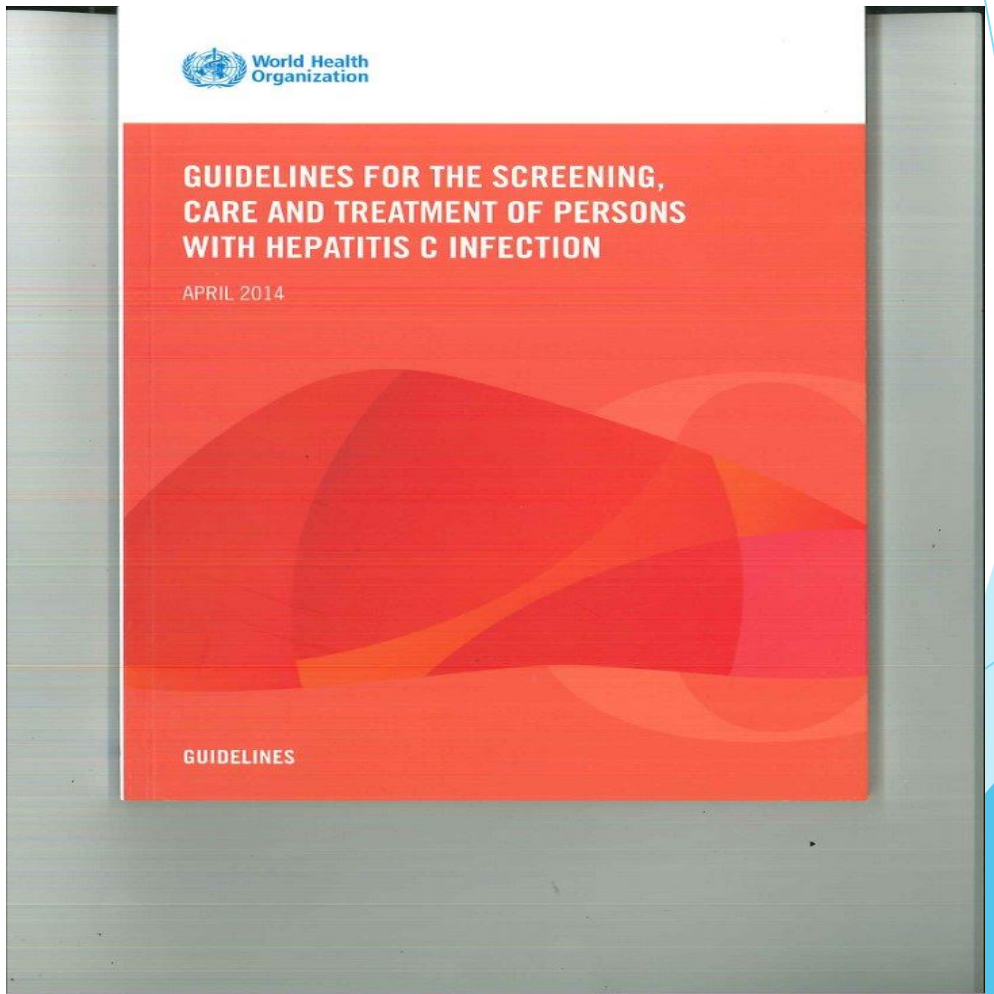
- Country data on HBV and HCV prevalence still minimal. Need for large population sizes to be sampled
- HBV prevalence may range from 3- 15%
- Higher prevalence of HBV in Liver clinic attendees
- HCV predominant among IDUS
- Rare confirmed cases of HCV among blood donors
- HIV/HBV Coinfection range from 10-15%
- HBV Genotype A most prevalent
- North Rift Region may be experiencing a different genotype of HBV . Implications on transmission, progression and treatment need to be elucidated
- Less than 50% of HBV vaccinees complete the required dosage. Reasons and efforts should be made how to increase adherence

Sustainable development Goals -SDGS

Goal 3.3: *By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and* ***combat hepatitis****, water-borne diseases and other communicable diseases*

WHO Guidelines- 2014





World Hepatitis Summit 2015
GLASGOW, SCOTLAND 2-4 SEPTEMBER

World Hepatitis Alliance
World Health Organization
The Scottish Government
IN PARTNERSHIP WITH
GCU
Health Protection Scotland

Glasgow Declaration

'The participants of the inaugural World Hepatitis Summit believe it is possible and essential to set as a goal the elimination of both hepatitis B and C as public health concerns. We therefore call upon governments in all jurisdictions to develop and implement comprehensive, funded national hepatitis plans and programmes in partnership with all stakeholders and in line with the World Health Assembly Resolution 67.6 and, in collaboration with the World Health Organization, to define and agree on realistic yet aspirational global targets for prevention, testing, diagnosis, care and treatment'.

Partners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MINISTRY OF HEALTH


WORLD HEPATITIS DAY
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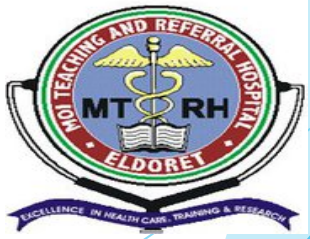
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