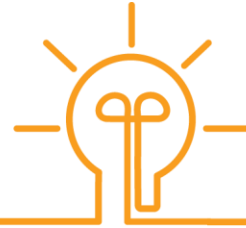




TBHIVCARE



Viral hepatitis C in the context of high risk sex and key populations in South Africa

Andrew Scheibe

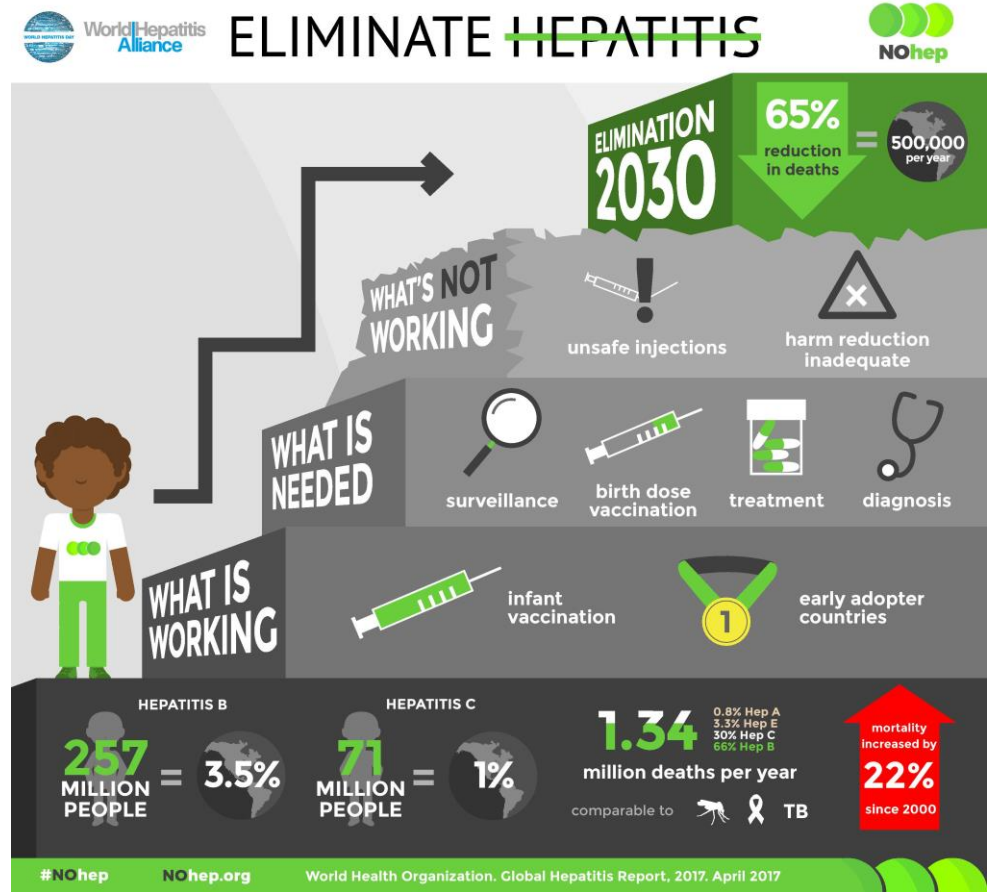
27 October 2018

Disclosures

Faculty member of the Bristol Myers Squibb Foundation (BMSF)
Honorarium received from Gilead Pharmaceuticals

Overview

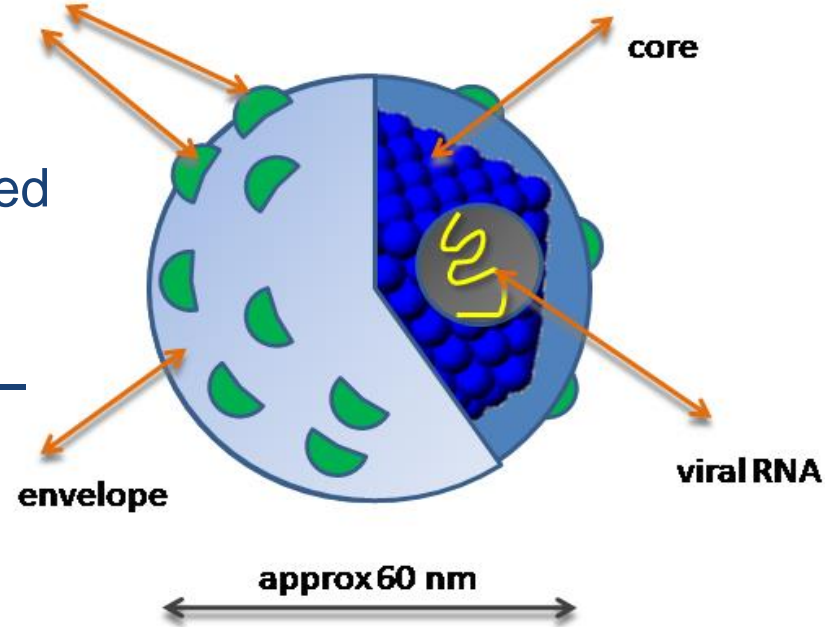
- Overview of hepatitis C
- Global epidemiology
- South African data on HCV among key populations
- Conclusions and recommendations



Hepatitis C virus

- RNA virus
- Rapid replication - 10^{12} virions produced per day
- No **RNA polymerase** and no ***proofreading ability of new viruses*** – resulting in many mutations
- Six viral genotypes: 1 - 6

envelope glycoproteins



Structure of Hepatitis C Virus

Transmission

Hepatitis C is transmitted through BLOOD contact

PARENTERAL ROUTE

- Most efficiently
- Predominant risk among people who inject with contaminated injecting equipment
- Needle-stick injuries
- Blood/blood products before 1992
- Tattooing, body piercing
- ? Traditional/cultural practices

SEXUAL TRANSMISSION

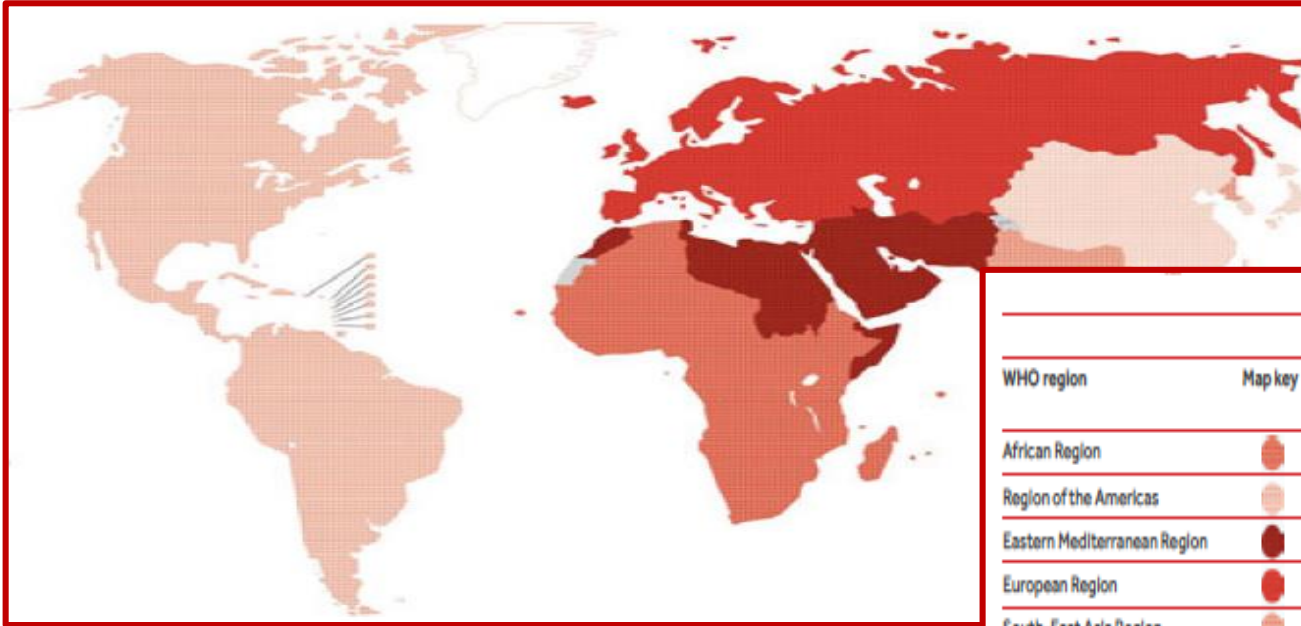
- Lower risk than HBV and HIV
- Elevated risk in 'high risk' or prolonged sex
 - ❖ Men who have sex with men
 - ❖ High risk sex practices

MOTHER-TO-CHILD TRANSMISSION

- 1- 5% infants born to HCV infected women
- Vertical transmission risk increases to ~20% in HIV/HCV co-infected mothers

Global epidemiology

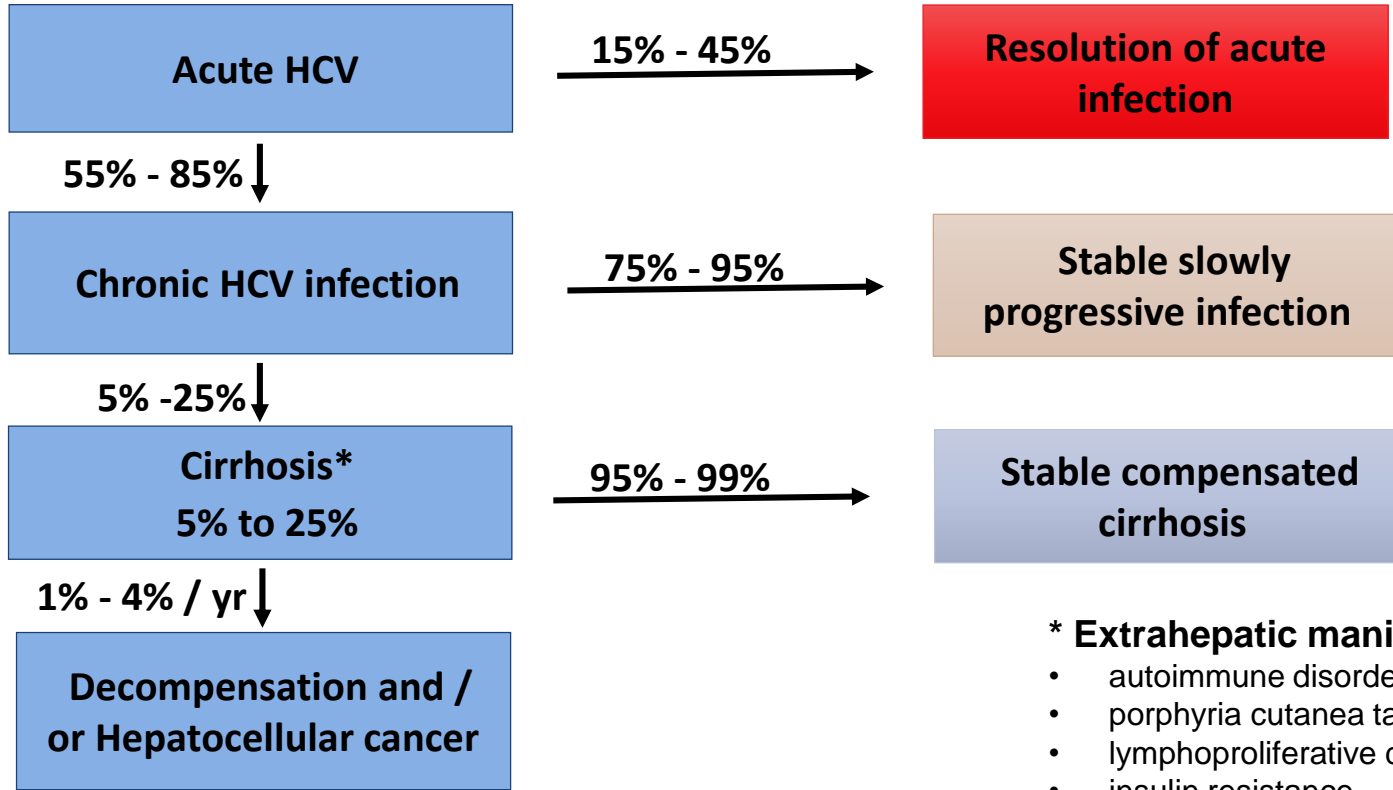
HCV incidence, general population (2015)



WHO region	Map key	Incidence of HCV infection			
		Incidence rate (per 100 000)		Total number (000)	
		Best estimate	Uncertainty interval	Best estimate	Uncertainty interval
African Region		31.0	22.5–54.4	309	222–544
Region of the Americas		6.4	5.9–7.0	63	59–69
Eastern Mediterranean Region		62.5	55.6–65.2	409	363–426
European Region		61.8	50.3–66.0	565	460–603
South-East Asia Region		14.8	12.5–26.9	287	243–524
Western Pacific Region		6.0	5.6–6.6	111	104–124
Global		23.7	21.3–28.7	1 751	1 572–2 120

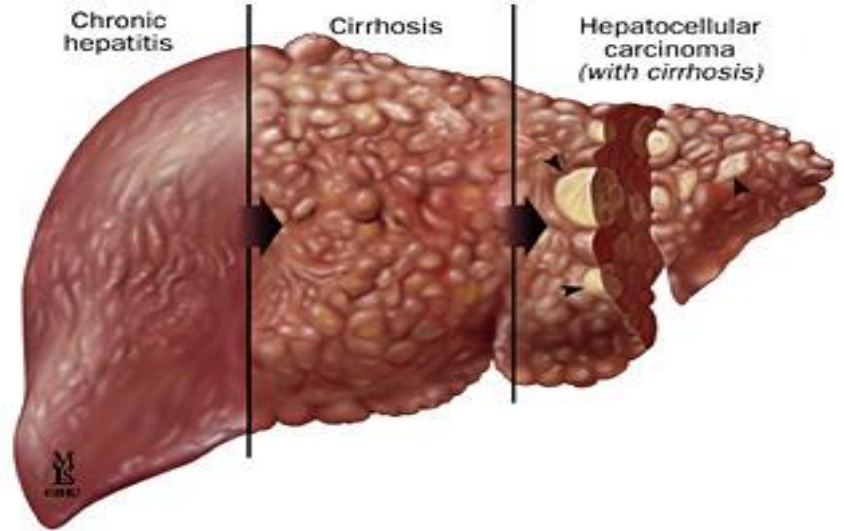
WHO Global Hepatitis report 2017

Natural history

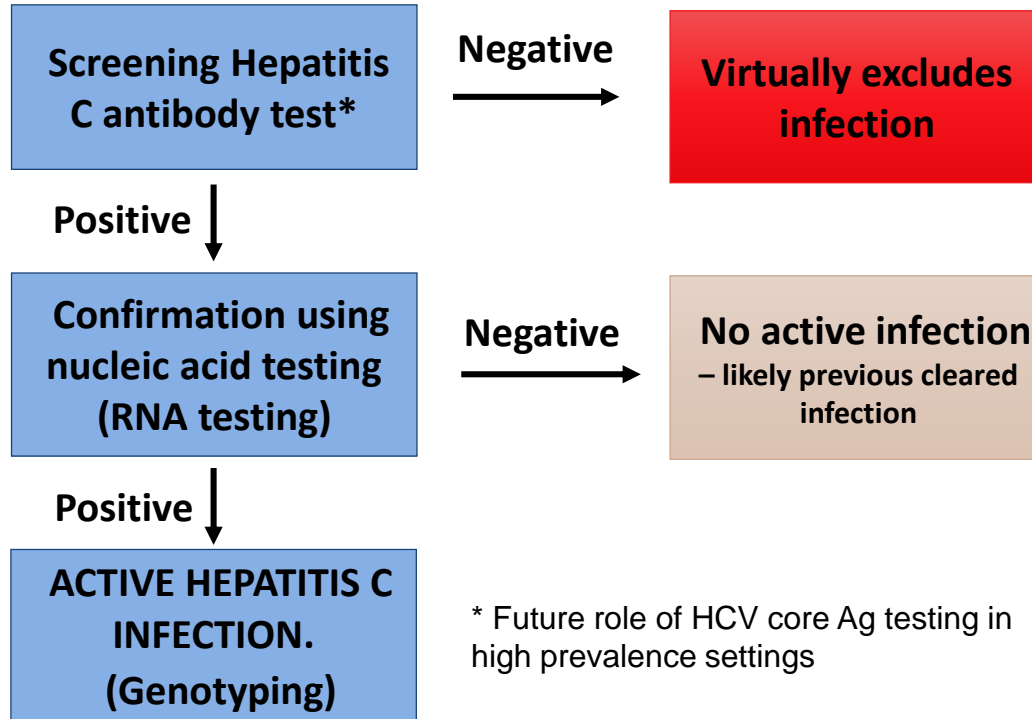


Factors progressing infection

- Previous and concurrent alcohol consumption
- Older age at time of infection (>40 years)
- Male gender
- Other co-morbidities:
 - ❖ HIV / HCV co-infection
 - ❖ HIV / HBV co-infection
 - ❖ Obesity
 - ❖ Iron overload



Diagnosis



* Future role of HCV core Ag testing in high prevalence settings

Indications for screening

- People who inject drugs
- Received blood/ organs pre-1992
- Unsafe medical injections
- Occupational exposure
- Chronic haemodialysis
- High-risk/traumatic sexual practices
- Men who have sex with men
- Use of intranasal cocaine
- Tattoos, piercing, acupuncture
- Surgical procedures without proper sterilisation procedures
- Traditional/cultural practices



Prevention & management

- No vaccine
- Prevention
 - Universal precautions and safe medical injections
 - Sterile injecting equipment and opioid substitution therapy for PWID
 - Condoms and lubricant
- Assess liver function, co-morbidities & medications
- Curative treatment with direct acting antivirals
 - All HCV infected people
 - Oral, combination treatment (12 – 24 weeks)
 - High cure rate (>90%), few side effects
 - No lasting immunity – potential for re-infection
 - Not yet registered in South Africa (SAHPRA)
 - Available via section 21



South African epidemiology

- Real seroprevalence of HCV is unknown
- Thought to be a low prevalence country
- Existing data suggests:
 - ❖ Urban blood donors (low risk) : 0.01 - 2.6%
 - ❖ Higher rate in the rural population : 3.8%
 - ❖ Rates expected to be higher in high-risk groups

HCV among MSM & MSW (Cape Town)(n=500)

Hepatitis C Infection Prevalence

	Screened positive, <i>n</i>	Prevalence, % (95% CI)
All participants (<i>N</i> =500)	17	3.4 (2.1 - 5.4)
MSM (<i>N</i> =285)	16	5.6 (3.5 - 9.0)
Non-MSM (<i>N</i> =215)	1	0.5 (0.06 - 3.3)

CI = confidence interval; MSM = men who have sex with men.

Genotypes:

- Genotype 1a - 50.0%
- Genotype 2 - 35.7%
- Genotype 4 - 14.3%
- Genotype 3 and 5 - 0%

Risk Factors:

- White ethnicity
- Low CD4+ count
- Drug use (any method)
- Sex while high
- Sex with sex worker

Source: Cogela et al.,

HCV among MSM who use drugs (Cape Town)(n=41)

Variable, participant demographics	n (%)
Drug-injecting behaviour	
Ever injected	36 (88)
In the past 3 months	33 (80)
Non-intravenous	32 (78)
Intravenous and non-intravenous	27 (66)
Ever shared equipment or needles	29 (71)
Condom use in the past 3 months	
Never	11 (27)
Some of the time	6 (15)
Most of time	13 (32)
All of the time	6 (15)
Not reported/applicable	5 (12)

Infection	% (n/N)
HCV antibody +ve	27% (11/41)
HBVsAg +ve	2% (1/41)
HIV +ve	40% (12/30)
HIV-HCV +ve	38% (3/8)

Source: Semugoma et al, SAMJ 2017

HCV initiative among Key Populations

- Aimed to recruit 3 500 Key Populations
- The study was linked to existing HIV prevention services and included:

An assessment enquiring about demographics, substance use and risk practices

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graph TD; A[An assessment enquiring about demographics, substance use and risk practices] --> B[HCV point-of-care (OraQuick®)]; B --> C[HCV viral load (COBAS® AmpliPrep/ COBAS TaqMan® HCV test)];
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HCV point-of-care (OraQuick®)

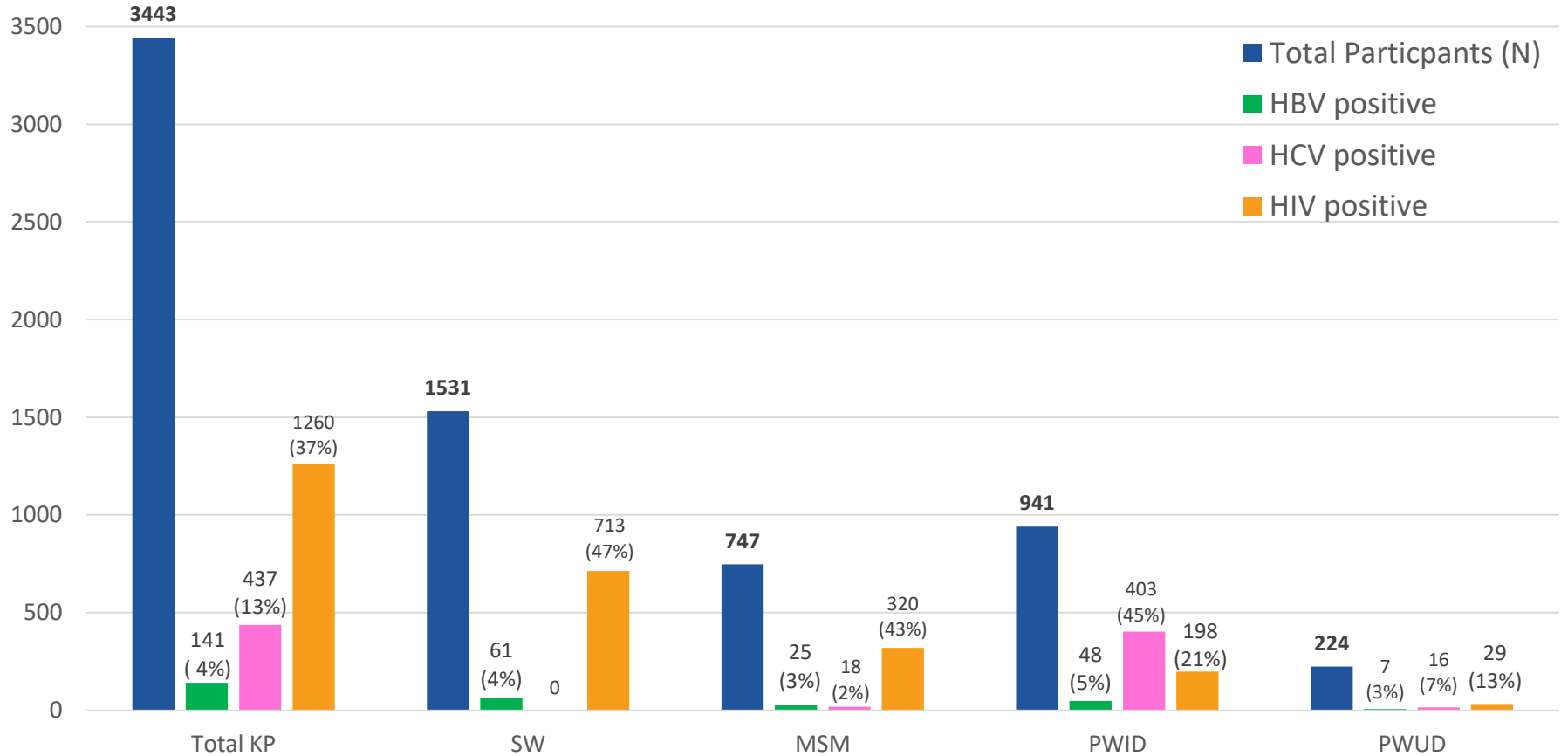
HCV viral load

(COBAS® AmpliPrep/ COBAS TaqMan® HCV test)

Participant socio-demographic characteristics (per protocol analysis)

	SW	MSM	PWID	PWUD	TOTAL
N (%)	1531 (44.5%)	747 (21.7%)	941 (27.3%)	224 (6.5%)	3443
Age [median (Range)]	29 (18 - 67)	29 (18 - 75)	29 (18 - 61)	29 (18 - 61)	29 (18 - 75)
Gender [n (%)]					
<i>Male</i>	48 (3.2%)	718 (96.8%)	813 (87.0%)	181 (80.8%)	1760 (51.5%)
<i>Female</i>	1462 (96.2%)	0	121 (12.9%)	43 (19.2%)	1625 (47.5%)
<i>TransMale</i>	5 (0.3%)	0	0	0	5 (0.1%)
<i>TransFemale</i>	5 (0.3%)	24 (3.2%)	1 (0.1%)	0	30 (0.9%)
Race [n (%)]					
<i>Black</i>	1156 (76.3%)	417 (56.2%)	388 (41.5%)	120 (53.8%)	2080 (60.9%)
<i>Coloured</i>	308 (20.3%)	65 (8.8%)	258 (27.6%)	74 (33.2%)	705 (20.7%)
<i>White</i>	40 (2.7%)	239 (32.2%)	252 (27.0%)	24 (10.8%)	555 (16.3%)
<i>Indian</i>	11 (0.7%)	10 (1.4%)	36 (3.9%)	5 (2.2%)	62 (1.8%)
<i>Other</i>	0	11 (1.5%)	0	0	11 (0.3%)
Housing [n (%)]					
<i>Homeless</i>	67 (4.4%)	18 (2.4%)	625 (66.8%)	116 (52.7%)	826 (24.2%)
<i>Shelter</i>	6 (0.4%)	5 (0.7%)	49 (5.2%)	19 (8.6%)	79 (2.3%)
<i>Private Housing</i>	1445 (95.2%)	716 (96.9%)	261 (27.9%)	85 (38.4%)	2506 (73.5%)

HBsAg, HCV and HIV prevalence, by population



Conclusions & recommendations

- South Africa has committed to End Viral Hepatitis by 2030
- National Guidelines for the Management of Viral Hepatitis approved (Sep '18)
- HCV transmitted through blood contact, infrequently during sex
- Sexual transmission increased:
 - Traumatic or prolonged sex
 - In context of (injecting) drug use and sex
- Local data confirms very high HCV prevalence among people recruited/identified as PWID, and higher among MSM
- Emerging programmatic data of injecting drug use among sex workers (Johannesburg and North West)
- Hepatitis C can be cured, but must be provided as part of a comprehensive package, that embraces a broader harm reduction approach

Thank you



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