Blood Borne Viruses & Pharmacy

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Aboriginal artwork produced by Gumbaynggir artist Brentyn Lugnan.

Objectives

- Review most prevalent blood borne viruses (BBVs), in Australia, which are human immunodeficiency virus (HIV), hepatitis B (HBV) and hepatitis C (HCV)
- Discuss epidemiology, transmission, disease progression, prevention and treatment
- Focus HCV & new treatments
- Review the impact of Needle and Syringe programs on BBVs

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Priority Populations

- People living with chronic BBVs
- People Who Inject Drugs (PWID)
- People from refugee and culturally and linguistically diverse backgrounds (CALD)
- Aboriginal and Torres Strait Islander people (ATSI)
- Prisoners and those in custodial settings
- Gay men and men who have sex with men (MSM)
- People engaged in sex work

Hepatitis B - HBV

- Type of viral hepatitis
- Dynamic
- Transmitted via blood & bodily fluids
  - blood to blood contact
  - unprotected sexual contact
  - mother to baby during child birth

PREVENTABLE BY VACCINATION

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HBV Snapshot in Australia (2017)

- 230 034 estimated number of people living with HBV
- Decline in newly diagnosed cases in younger people
- Rates remain high in over 30's
- Newly diagnosed HBV cases among ATSI people halved over past 5 years
- Estimated 63% of people living with HBV had been diagnosed
- Only 7% having treatment
- Only 27% were having appropriate clinical monitoring

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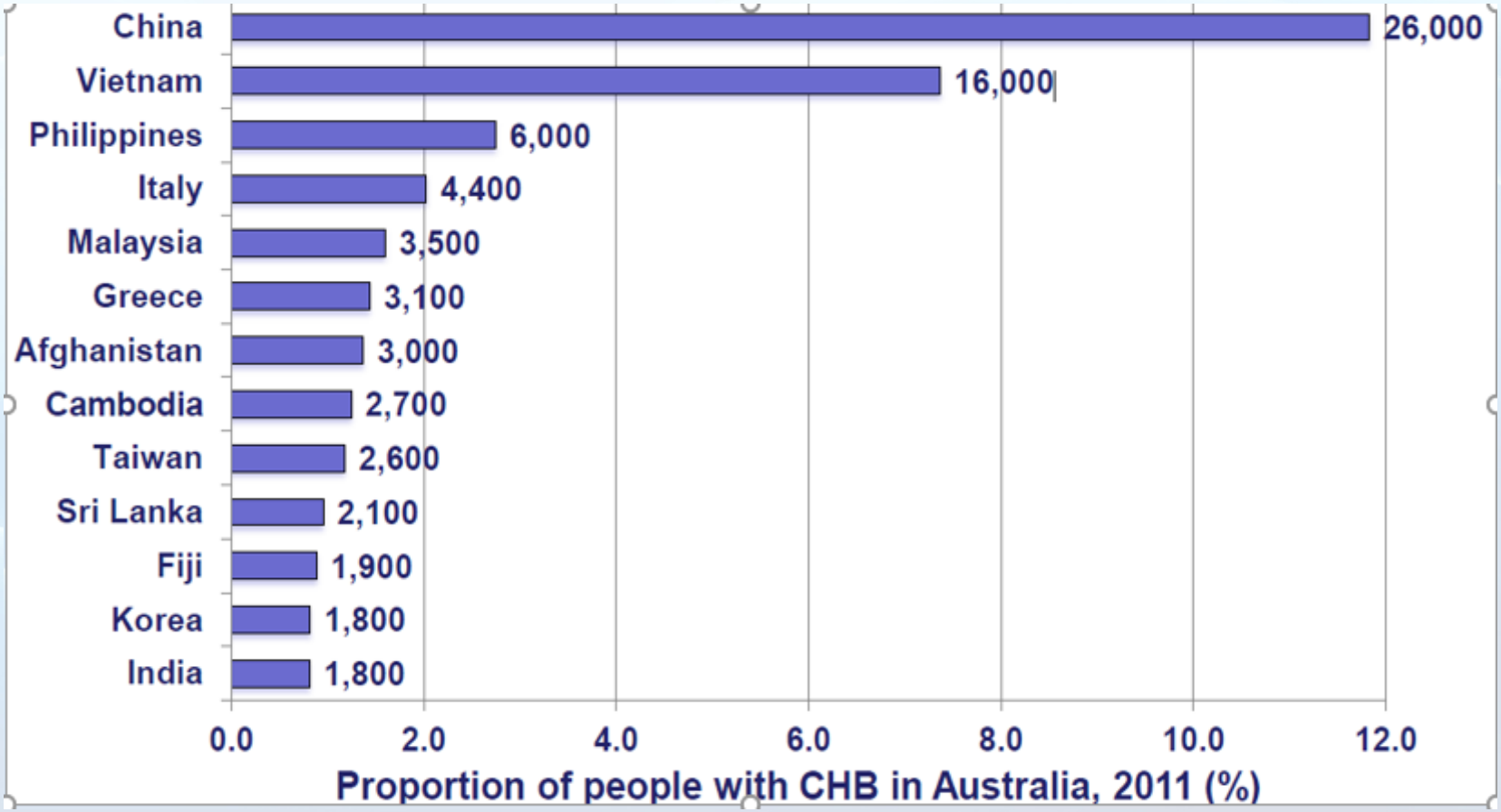
Kirby – Annual Surveillance report on HIV, Viral Hepatitis & STI's in Australia 2016

Acute v's Chronic (HBV – CHB)

- Acute – first infected
- Chronic - if present 6 months or longer
- Immune system fails to clear the virus
- Risk of progressing depends on when infected
- CHB in Australia majority born overseas

Top Countries of birth for CHB in Australia



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Why worry?

- Risk of progression to cirrhosis
- Risk of progression to liver cancer and liver failure
- Liver cancer top rating cancer
- Monitoring for liver cancer – 6 monthly bloods and u/s
- There are 412 deaths in 2016 attributable to hepatitis B

Kirby – Annual Surveillance report on HIV, Viral Hepatitis & STI's in Australia 2016

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Treatment

- Reduce probability disease progression
- Not everyone requires HBV treatment
- Treatment rarely cures HBV and is usually lifelong
- Treatment is straightforward if meet criteria
- Two main antivirals used are tenofovir and entecavir
- S100 prescription - community pharmacies

HIV Snapshot in Australia (2016)

- 26 444 estimated people living with HIV
- 89% diagnosed
- 95 % of those diagnosed under medical care
- 86% diagnosed on anti retroviral therapy, ART
- 93% of those prescribed ART achieved viral suppression

Kirby – Annual Surveillance Report on HIV , Viral Hepatitis & STI's in Australia 2017

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Incidence and Testing Rates

- HIV notification and incidence rates are stable
- Greater uptake HIV testing
- Rapid tests
- In home testing kits
- 29 % HIV notifications diagnosed late, which results in poorer outcomes

HIV Transmission in Australia

- Child birth or in pregnancy - very rare
- People who inject drugs , PWID – very low
- Sexual transmission – concentrated amongst men who have sex with men , MSM

National BBV and STI Surveillance and Monitoring Report, 2016

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Anti Retroviral Treatment (ART)

Aim

1. to reduce HIV related morbidity and mortality
2. viral suppression and reduce transmission

- Universal treatment following diagnosis
- Lifelong
- ART - is classed as section 100 HSD
- Use generally 3 active drugs from 2 or more classes.

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Pre Exposure Prophylaxis - PrEP

- Listed PBS 1/4/2018
- Once daily or on demand
- Prevent HIV in HIV neg people at significant risk HIV
- Any Doctor or GP can prescribe
- Tenofovir/emtricitabine- TDF / FTC Truvada

Australasian Society for HIV, Viral Hepatitis and Sexual Health Medicine HIV Pre-Exposure Prophylaxis: Clinical Guidelines. Update April 2018

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Hepatitis C Virus

- Transmitted via blood to blood contact
- HCV is curable
- HCV treatment can be thought of as prevention
- All people living with hepatitis C should be diagnosed and considered for treatment
- People actively drinking alcohol and or injecting can be treated

Risk Populations

- PWID or history of IDU
- People in custodial settings
- People with tattoos or body piercing
- People who received a blood transfusion or organ transplant before 1990
- Sexual partners of an HCV-infected person
- People with evidence of liver disease
- People who have had a needle-stick injury
- Migrants from high-prevalence regions (Egypt, Pakistan, Mediterranean and Eastern Europe, Africa and Asia)
- ATSI population
- Children born to HCV infected mothers
- People infected with HIV or HBV

Snapshot of HCV in Australia (2017)

- 30 434 people treated (199 412 untreated)
- Dramatic increase in treatment rates since March 2016
- Approx. 11000 new cases in 2016
- 50% increase in notification rate in ATSI under 25s
- 31% of all liver transplants attributable to HCV or HCV related HCC

Kirby-Annual Surveillance Report on HIV, Viral hepatitis &STI's in Australia 2017

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HCV Elimination 2030?

WHO vision: "*A world where viral hepatitis transmission is stopped and everyone has access to safe, affordable, and effective treatment and care*"

2030 Targets

90% Diagnosed

80% Treated

65% Reduced mortality

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HCV prevalence, Diagnosis & Treatment

	PREVALENCE	DIAGNOSIS	TREATMENT
Primary Health Network	Proportion of the population living with CHC	CHC notification rate per 100,000	Proportion of people with CHC who received treatment
Northern Territory	1.87%	80.3	9.4%
Western NSW	1.64%	71.1	12.6%
North Coast (NSW)	1.57%	90.4	25.3%
Northern Queensland	1.30%	56.0	14.1%
Brisbane South	1.28%	55.1	10.7%
Murrumbidgee	1.26%	74.5	10.8%
Western Queensland	1.23%	45.6	6.9%
Darling Downs and West Moreton	1.10%	46.8	13.5%
Central Queensland, Wide Bay, Sunshine Coast	1.09%	52.6	16.6%
South Eastern NSW	1.09%	55.6	19.9%
Country WA	1.08%	53.0	12.9%
Hunter New England and Central Coast	1.05%	60.9	19.3%
Tasmania	1.04%	45.2	17.0%
Central and Eastern Sydney	1.03%	44.5	20.1%
Gippsland	1.01%	51.7	21.9%
South Western Sydney	0.99%	46.9	16.7%

	PREVALENCE	DIAGNOSIS	TREATMENT
Primary Health Network	Proportion of the population living with CHC	CHC notification rate per 100,000	Proportion of people with CHC who received treatment
Murray (VIC)	0.98%	54.9	18.1%
Perth South	0.97%	45.0	11.2%
Gold Coast	0.97%	46.2	20.7%
Nepean Blue Mountains	0.94%	41.6	14.4%
North Western Melbourne	0.94%	45.4	19.0%
Brisbane North	0.89%	38.3	16.2%
Australian Capital Territory	0.88%	36.3	21.2%
Western Victoria	0.84%	43.4	23.8%
Perth North	0.81%	37.8	14.6%
South Eastern Melbourne	0.79%	33.9	25.1%
Western Sydney	0.74%	32.7	14.8%
Country SA	0.62%	33.7	19.8%
Adelaide	0.58%	25.3	25.9%
Eastern Melbourne	0.52%	22.1	24.9%
Northern Sydney	0.41%	16.4	21.6%
NATIONAL AVERAGE	**0.94%**	**53.9**	**18.8%**

Figure 1: Heat map of CHC prevalence, diagnosis and treatment uptake uptake by Primary Health Network, 2016 (green = lowest; red = highest)

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HCV prevalence, Diagnosis & Treatment

LHD	Prevalence	Diagnosis Per 100K	Proportion Received Treatment
North Coast NSW	1.57 %	90.4	25.3 %
National Average	0.94 %	53.9	18.8 %

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HCV Treatment – DAA's

- Since March 2016 **D**irect **A**cting **A**ntivirals have been available
- Newest medication released is PANGENOTYPIC Sofosbuvir / Velpatasvir (Epclusa) released 1/8/17
- Still need genotype for PBS

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Main treatment options PBS

Regimen	Duration	Genotypes
Sofosbuvir/ Velpatasvir - EPCLUSA	□ 12 weeks	1,2,3,4,5,6
Elbasvir/grazoprevir ZEPATIER	□ 12 weeks □ 16 weeks □ +RBV	1 or 4
Sofosbuvir/Ledipasvir HARVONI	□ 8 weeks □ 12 weeks □ 24 weeks	1

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Potential Drug to Drug Interactions

- Cross check all medications including prescribed, over the counter and herbal

- www.hep-druginteractions.org

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Success Rates & Access

- Across all treatments > 95% success rates
- The aim is a cure
- Need to be tested for HCV RNA 12 weeks post completion of treatment.
- Treatment via GPs, Liver Clinics, Specialists, Drug & Alcohol settings
- S100, S85 prescriptions

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Why worry?

- Progression to cirrhosis
- Progression to hepatocellular carcinoma and or liver failure
- Liver transplant
- Psychological impacts
- Stigma
- Extra hepatic manifestations

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Specific Issues on HCV Reinfection for PWID

- **Acknowledgement:** There will be cases of HCV reinfection; if there are no cases, it is not a current PWID population
- **Harm reduction optimization (NSP, OST access):** HCV reinfection incidence will reflect HCV incidence in the setting
- **Rapid scale-up:** A slow scale-up will create HCV "susceptible" PWID without reduction in viremic pool
- **Individual-level strategies:** Treatment of injecting partners crucial
- **Access to retreatment:** Without stigma and discrimination
- **Community engagement and partnership:** Use of peer workers

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Slide credit: clinicaloptions.com

Role of NSPs in reducing BBV's

- Early adoption of NSP's successful in stopping HIV epidemic in Australia.
- 83% HCV infections resulted from unsafe injecting use practices
- NSP key component in reducing BBV and STI infections
- Key is reducing associated mortality and morbidity and personal and social impacts
- Per exposure probability HIV 0.1-0.5 % and HCV 2.5 -5%

Centre for Research Excellence Into Injecting Drug Use, 2015

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NSPs

- Despite NSPs HCV prevalence remained steady
- Modelling shows if no NSPs, rates for HIV/HCV would be higher
- Sharing & re-sharing is an issue
- HCV treatment alone will not eliminate HCV

Centre for Research Excellence into Injecting Drug Use, 2015

Thank you

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Assessment

1) Chronic HBV can result in ?

a) Liver failure

b) Cirrhosis

c) Liver Cancer

d) All of the above

Assessment

2) Which statement is true ?

a) 95% of infants with acute HBV will go on to develop chronic HBV

b) 5 % of children with acute HBV will go on to develop chronic HBV

c) 95% of adults with acute HBV will go on to develop chronic HBV

Assessment

3) Success rates for HCV treatment. Which is true?

a) >95%

b) 80%

c) 60%

d) 100%

Assessment

4) Which medication can be prescribed for PrEP on PBS?

a) Any HIV medication

b) Abacavir/lamivudine/zidovudine(trizivir)

c) Tenofovir/emtricitabine (Truvada)

d) Lopinavir/ritonavir (kaletra)

Assessment

5) HCV treatment is determined a success when:

a) LFT's are normal

b) Hep C antibody test is negative

c) HCV RNA is note detectable at end of treatment

d) HCV RNA is not detectable > 12 wks post treatment

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