The cascade of care for people living with chronic hepatitis B: access to treatment and monitoring in Australia

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Doherty Institute

- No conflicts of interest to declare

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Outline

- ✧ 1. What is a cascade of care?
- ✧ 2.Methods - population burden estimates
  - proportion diagnosed
  - proportion in care
 - proportion on treatment

- ✧ 3. Results
- ✧ 4. Conclusions

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Cascade of care analysis

- ➢Whole of health system response
- ➢Key populations
- ➢Available measurable indicators
- ➢Visual representation of engagement
- ➢Identifies issues and opportunities
- ➢Trends over time

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(1) Gardener et al, CID 2011. (2) http://aids.gov/federal-resources/policies/care-continuum
(3) Cohen et al, Journal of Viral Hepatitis 2010 (4) The Kirby Institute, HIV in Australia: Annual Surveillance report 2014 Supplement
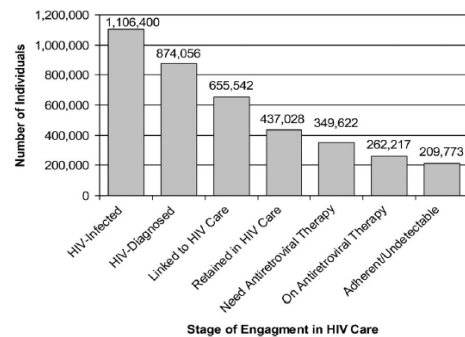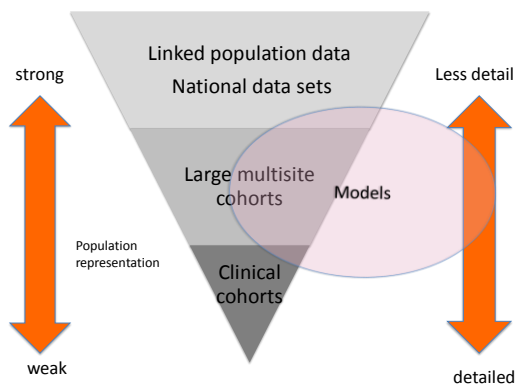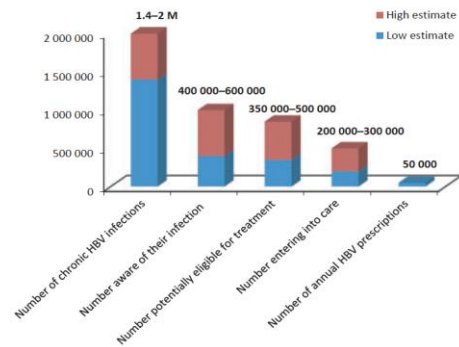

Ref: Gardner et al CID, 2011

Figure 2 Estimated HIV care and treatment cascade in Australia (best estimate and uncertainty bounds of plausible limits)
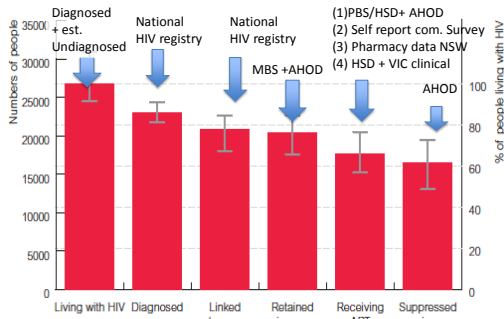
Ref: The Kirby Institute, HIV in Australia: Annual Surveillance report 2014 Supplement

Ref: Cohen et al, Is chronic hepatitis B being undertreated in the United States? Journal of Viral Hepatitis 2010

Disease burden estimates

- Census based estimates 2011
- Model based estimates VIDRL 2012
- Convenience serosurvey 2005
- Antenatal seroprevalence 2008

Plausible range of population estimates

Source	Reference	Year	Prev.	Lower	Estimates	Upper
Census	MacLachlan et al 2013	2011	1.01%	192,000	218,500	249,000
Model	VIDRL 2012	2012	0.97%		207,000	
Antenatal NSW	Reekie et al 2013	2008	0.75%	154,800	161,250	169,850
Serosurvey VIC	Cowie et al 2010	2005	1.10%		236,000	

Proportion diagnosed

- Model developed by VIDRL using NNDSS data
- Calculated as proportion of those who have ever been diagnosed over those who ever having lived with CHB.[1]
- Gaps in Victorian notifications from early 1990s the most important influence on plausible range.
- 57% estimated in 2012
  (1) MacLachlan et al. The burden of chronic hepatitis B virus infection in Australia, 2011. Aust N Z J Public Health.

Eligible for treatment

- 15% of total population require treatment
- Range 10%-25% clinical cohorts in care as high as 50% but not representative
- Has been applied in US cascade [1] economic modeling studies [2-4]
- data from clinical cohorts and also community screening.

(1) Cohen et al, Journal of Viral Hepatitis 2010. (2) Robotin MC, et al.. BMC Health Serv Res. 2010;. (3) Veldhuijzen et al. GUT 2009(4) Hutton. Ann Intern Med.2007;147(7):460-9.

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Indicator of care and link to care

- HBV DNA major predictor of risk of complications liver cancer and cirrhosis [1]
- Included in all monitoring recommendations [2,3]
- Recommended all people with CHB have yearly
- Could be used as a indicator for linked to care within 3 month of diagnosis
- Measurable: Medicare rebatable with unique item number for a yearly test

(1) Chen CJ et al. JAMA 2006, (2) EASL clinical practice guidelines. Journal of Hepatology. 2012 (3) Liaw Y, et al. Asian-Pacific consensus statement on the management of chronic hepatitis B: a 2012 update. Hepatology Int. 2012;6:531-61

Receiving care and on treatment

- Receiving care= treatment + annual viral load

- Treatment numbers calculated from
  1) HSD expenditure data cross referenced with PBS data from requested from Medicare excluding people receiving HIV medication.
  2) drug company sales
- Annual viral load MBS data by jurisdiction (item 69482).

www.medicareaustralia.gov.au/statistics/mbs_item.shtml

Virological suppression/Adherence

- Systematic review from 2012 (6 studies) estimated adherence to oral HBV drugs to be high 81-99%. [1]
- Adherence important in viral suppression.[2]
- Large pharmacy data study from US age <45 and recent initiation associated with poorer adherence.[3]
- Need to look at local data

(1) Lieveld et al, Annuals of Hepatology 2013, (2) Hilleret Journal of Hepatology 2010 (3) Choiyputta Journal Hepatology 2011.
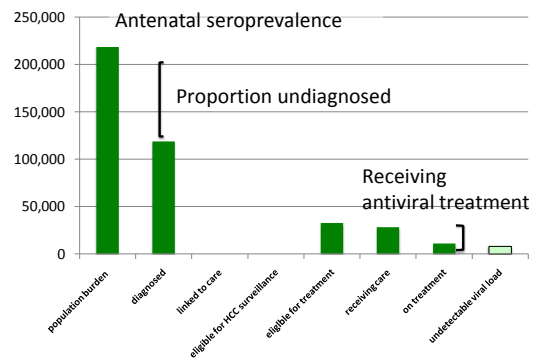
Cascade of care for Hepatitis B 2012
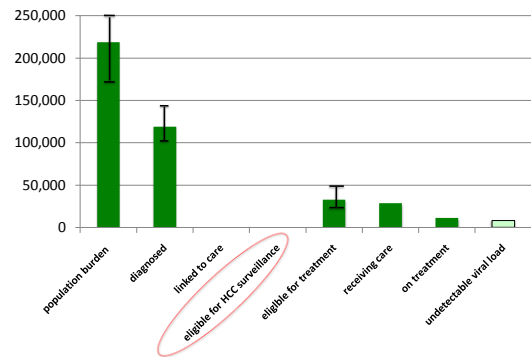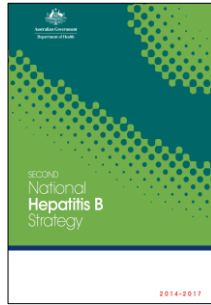

**Cascade of care for Hepatitis B 2012**
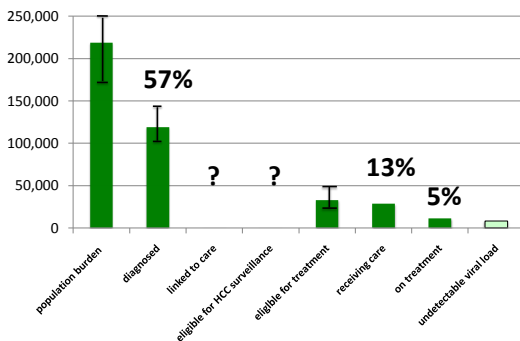
National Indicators

National indicators for CHB 2014-2017

- Missed opportunity to include viral load to estimate proportion of people in care

SECOND
National
**Hepatitis B**
Strategy

2014-2017

State/Territory	Number of yearly viral load tests, 2012	Number of people receiving treatment 2012 (%)	Census based estimates of people living with CHB, 2011	Proportion of people with CHB in care	Estimated population not in care
ACT	265	152 (4.2%)	3,603	12%	3,170
NSW	7,782	5844 (7.6%)	77,076	18%	63,202
NT	336	72 (2.0%)	3,556	11%	3,165
Qld	1,412	941 (2.5%)	37,427	6%	35,181
SA	141	419 (2.9%)	14,442	4%	13,864
TAS	47	31 (0.9%)	3,513	2%	3,442
VIC	6,856	2979 (5.2%)	56,836	17%	47,174
WA	528	549 (2.5%)	22,055	5%	20,952
Australia	17,367	10,987 (5.0%)	218,567	13%	190,153

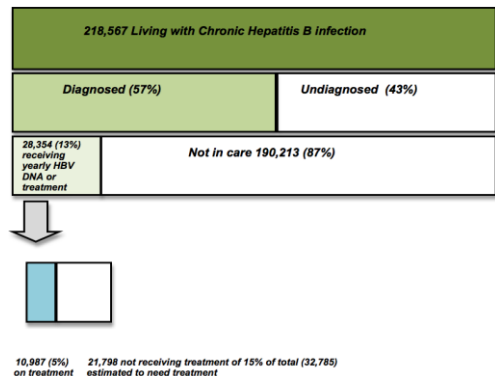## HBV DNA tests by year 2008-2012
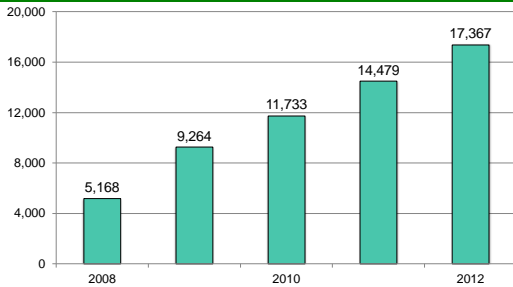
Ref: NNDSS (www9.health.gov.au/cda/source/cda-index.cfm) (2) www.medicareaustralia.gov.au/statistics/mbs_item.shtml

New diagnoses & annual increase in testing

Annual notifications

Increase in tests by year
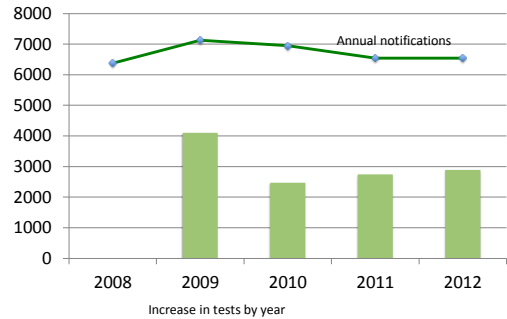
Limitations

- Data not linked so a snapshot of care
- Likely not the same group being tested year to year ongoing care likely to be less
- Medicare data accuracy or misclassification
- Population burden dependant on accuracy of seroprevalence estimates for a given population

218,567 Living with Chronic Hepatitis B infection

| Diagnosed (57%) | Undiagnosed (43%) |

28,354 (13%) receiving yearly HBV DNA or treatment — Not in care 190,213 (87%)

10,987 (5%) on treatment — 21,798 not receiving treatment of 15% of total (32,785) estimated to need treatment

Reaching targets for 2017

80% diagnosed and 15% on treatment

but we should also consider proportion diagnosed in care

LEADERSHIP and FUNDING

Community leadership and empowerment
Decrease stigma and discrimination
Increase knowledge transfer
Provide a responsive health system

Conclusion

- Pilots are not the answer.

- People, families and communities need a to scale approach with all parties led by community working to empower improve knowledge and understanding and service delivery.

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