Comparing the effectiveness of hepatitis C testing pathways: standard vs. targeted testing

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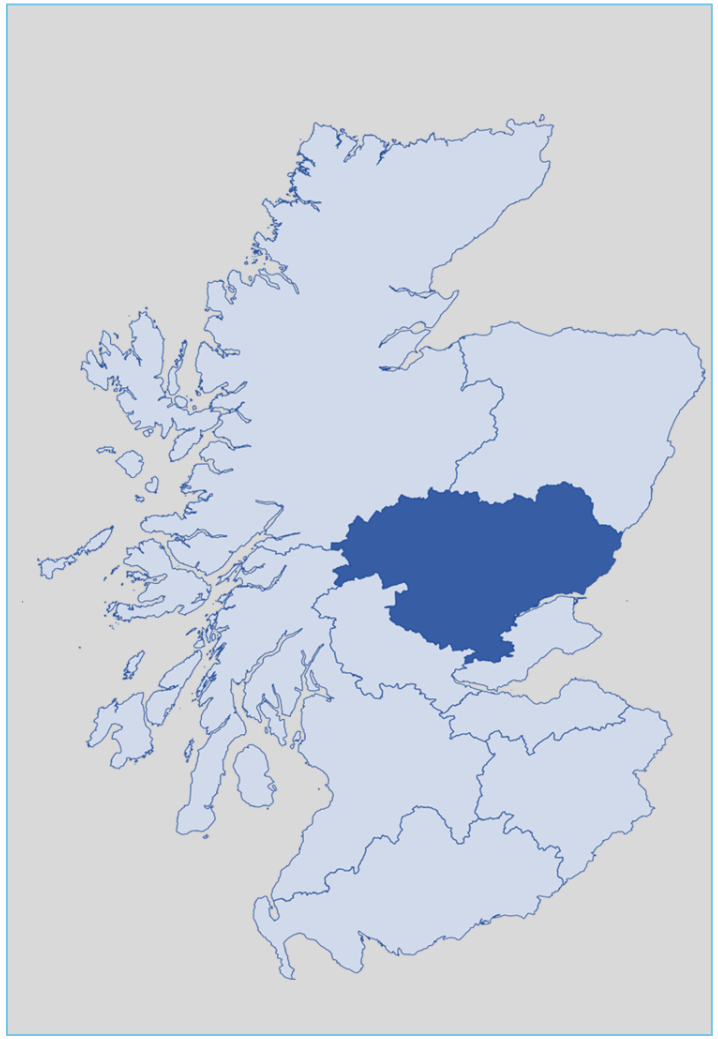
Speaker declarations

The Everyone's HCV project was funded by Gilead

Background: Hepatitis C in Scotland

- Estimated to be 21 000 prevalent cases
- > 90% of infections are due to injecting drug use
- Free healthcare through National Health Service
- HCV treatment is “restriction free” with direct acting antivirals curing >95% of patients
- Scotland’s HCV action plan:
  - → Identified access to testing as a major obstacle to diagnosis
  - → Key target was to identify the undiagnosed population

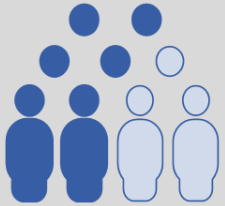
Epidemiology: Population of Tayside with HCV



Tayside is a region in Scotland with a population of 400 000[2] people.

HCV prevalence is 0.5-6%

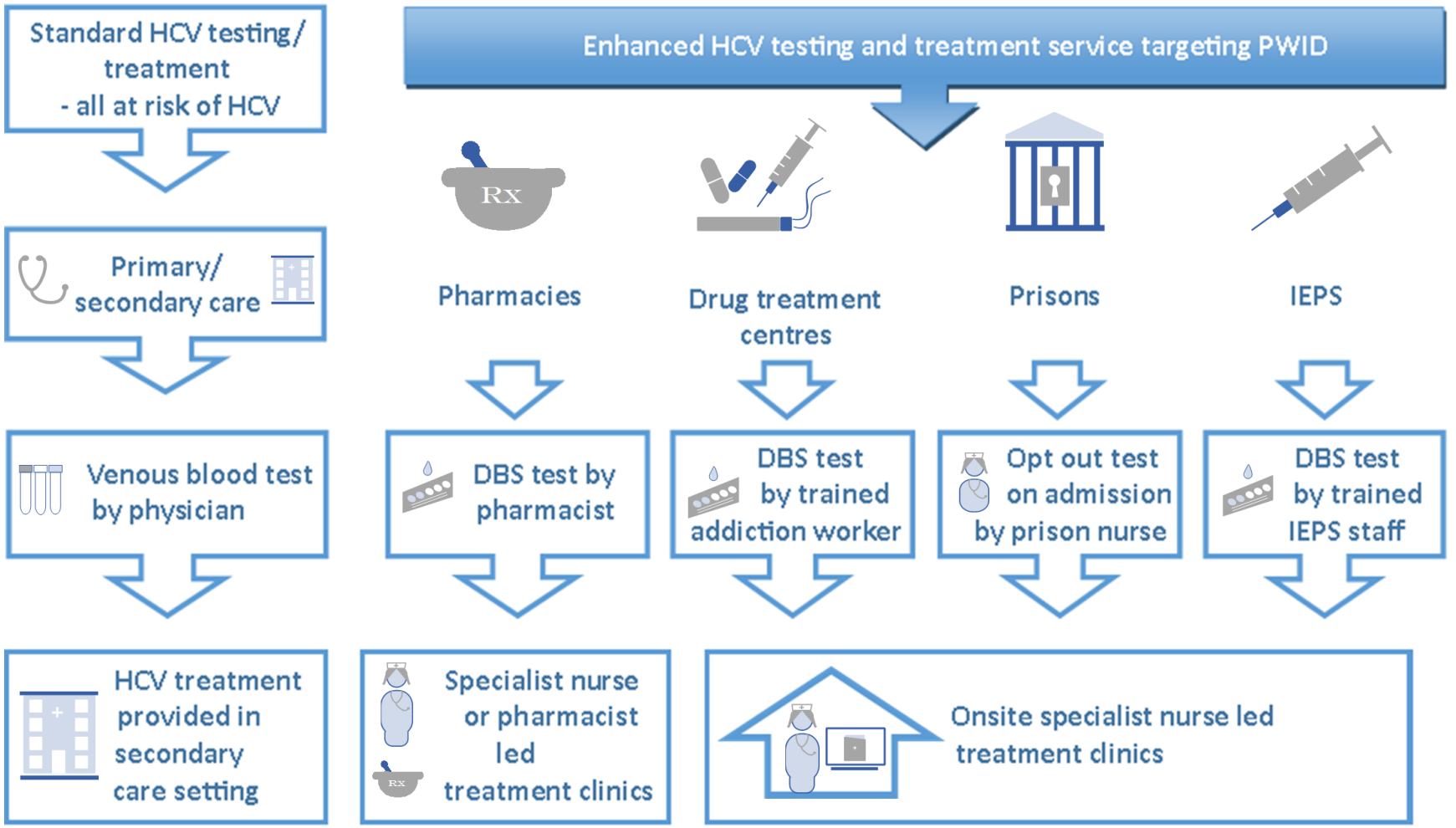
2000 - 2400 infected



1730 diagnosed

300 – 700 to find…

Hepatitis C diagnosis pathways in Tayside



PWID defined as those who either (a) are currently injecting drugs, (b) have ever injected drugs and are currently on opioid substitute therapy, or (c) have ever injected drugs and are currently in prison

DBS: dried blood spot; OST: opioid substitution therapies; POC: point of care; PWID: people who inject drugs; IEPS injecting equipment provision sites

Everyone's HCV: Aim

Primary

→ To demonstrate the most cost-effective pathway(s) of diagnosing HCV infection

Secondary objectives

1. To define cost effectiveness of each pathway
2. To define rate of conversion of test-to-diagnosis and diagnosis-to-treatment for each pathway

Everyone's HCV: Methods

Retrospective review of all previous HCV testing and diagnosis in Tayside

Anonymised data from NHS Tayside virology lab

Every Hepatitis C test (antibody and PCR) ever processed through the labs

- → Allocated according to testing source (non Tayside sources excluded)
  - → General practice vs. secondary care vs. needle exchange vs. pharmacy etc.

Clinical data from the clinical HCV database

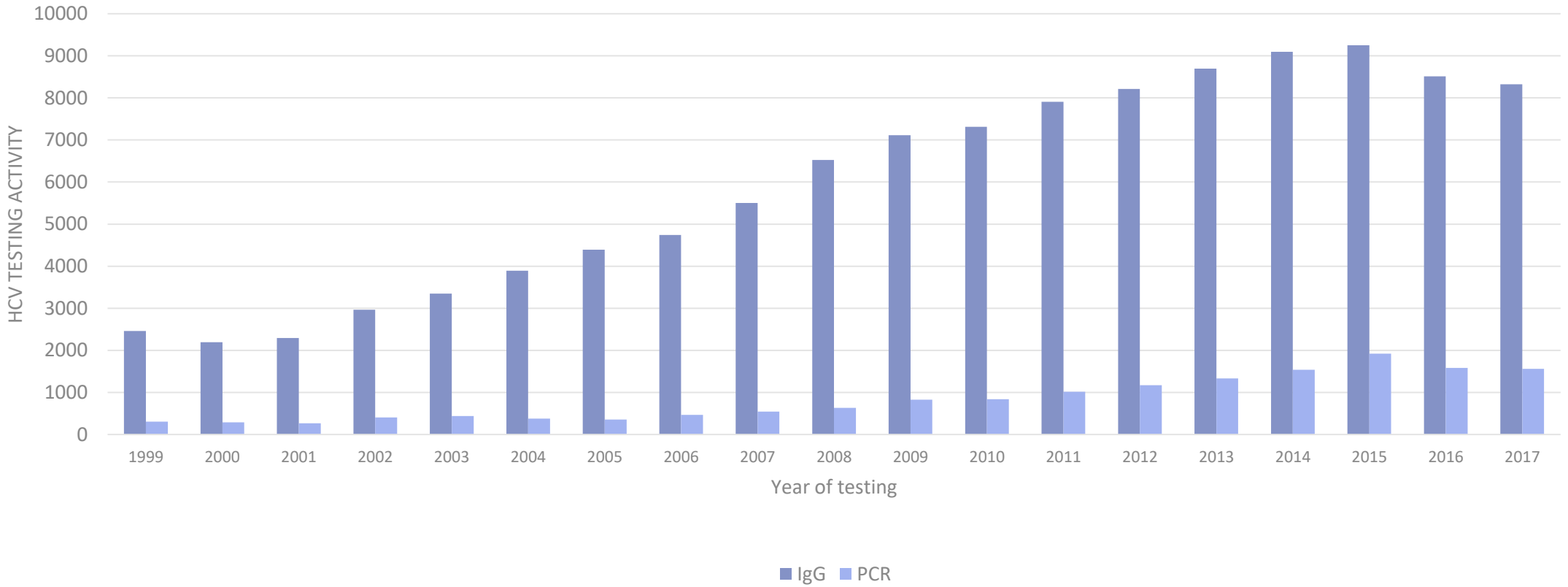
→ Every individual in NHS Tayside with a positive HCV antibody +/- PCR test

- → Testing source, confirmatory testing, engagement and treatment

Costings for each pathway and development of Markov models for cost effectiveness analysis

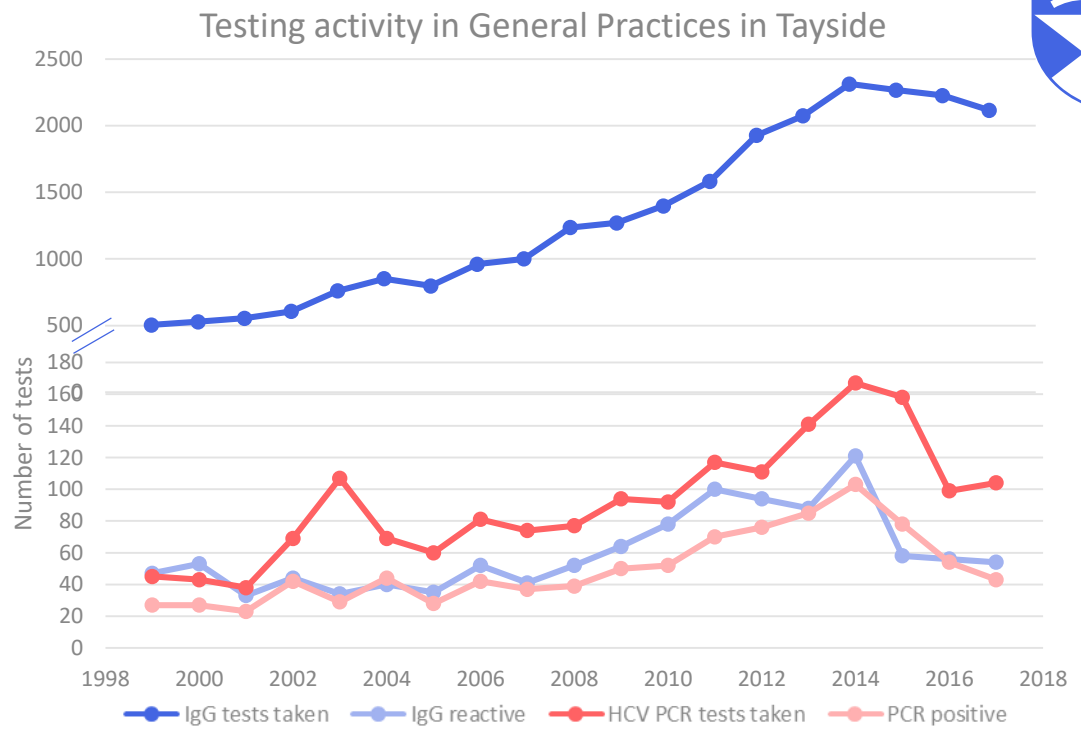
Everyone's HCV: Results

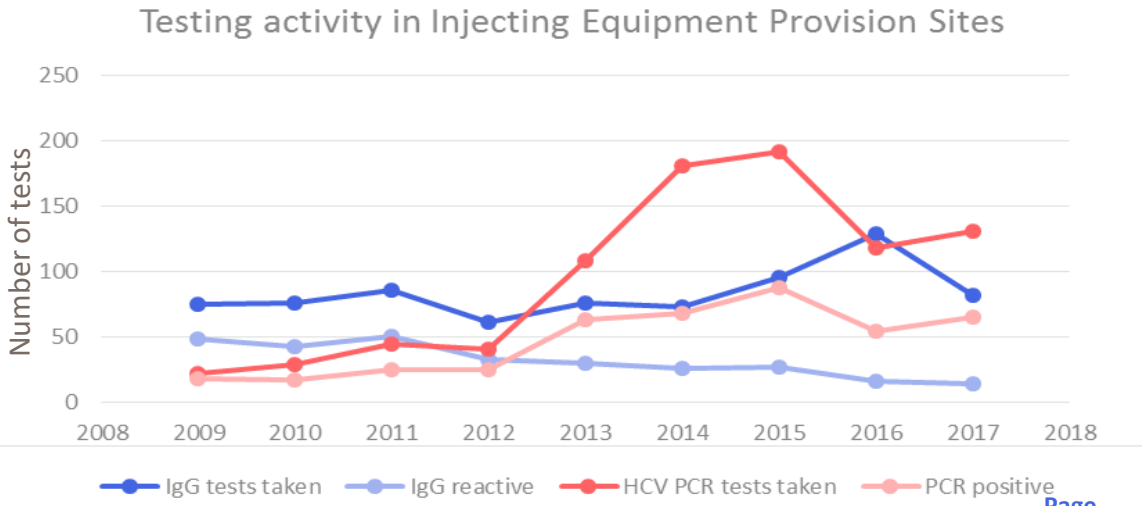
Overall testing activity in NHS Tayside between 1999 and 2017
Volume of both IgG and PCR testing has increased over time



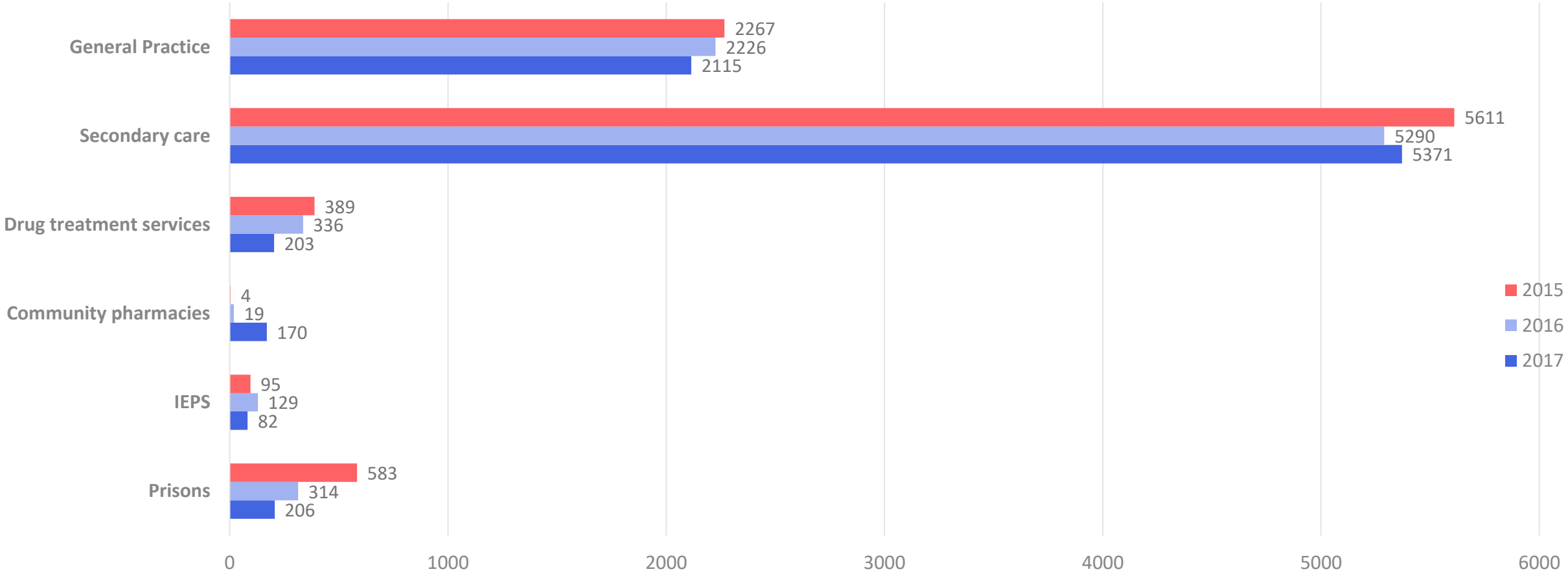
Everyone's HCV: Results

- Testing across all pathways has increased over the last two decades
- Testing in general practice shows an increase in testing without an increase in new HCV diagnoses
- Whilst increased testing in IEPS results in increased numbers of positive HCV PCR
- Rise in PCR testing (IEPS) represents repeat testing in people known to be IgG positive
  - Annual screening
  - Recent risk of re-infection
  - Treatment monitoring (pre DAA)

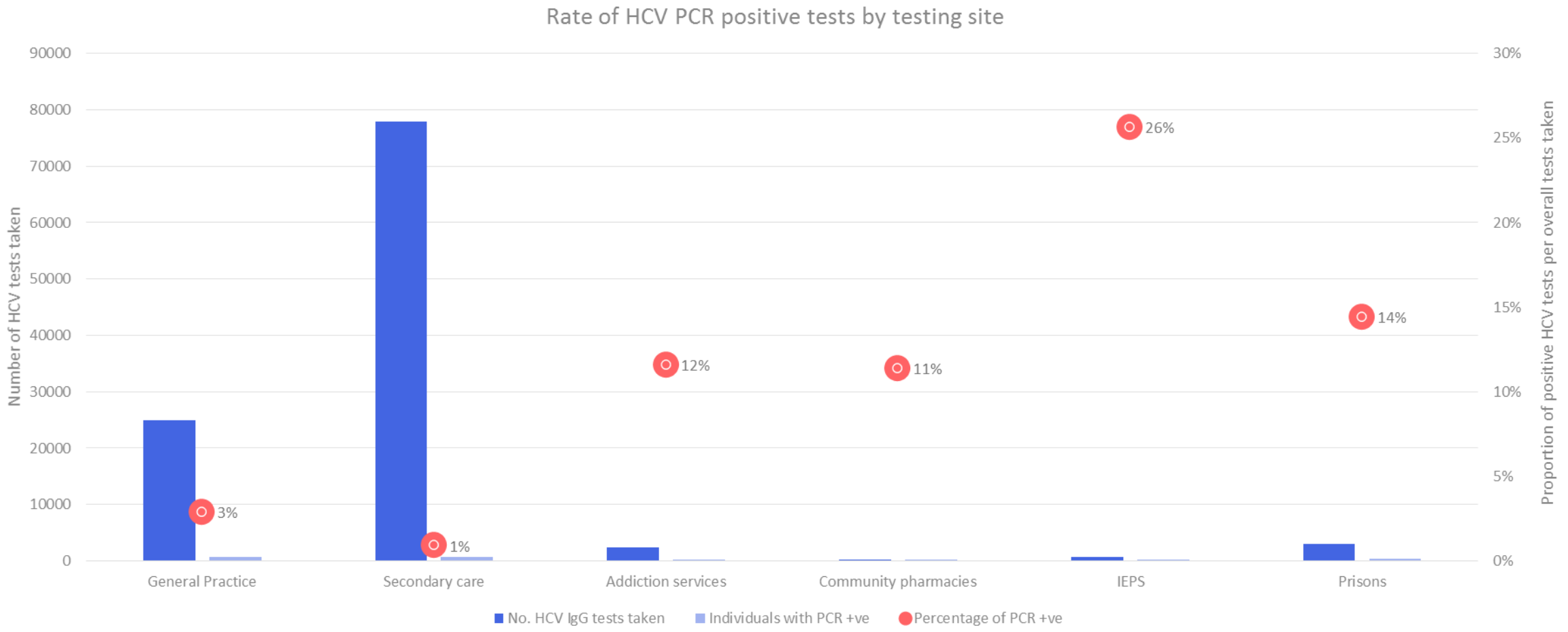




IgG testing in different testing sites



Everyone’s HCV: Results

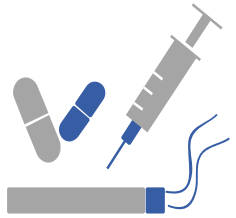


Baseline characteristics of HCV positive patients for different pathways

Primary care

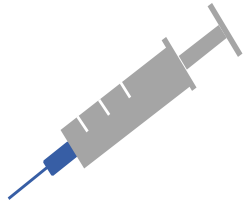
65% ♂
35% ♀
Mean age 43

Drug treatment services



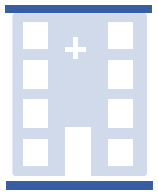
71% ♂
29% ♀
Mean age 37

IEPS



60% ♂
40% ♀
Mean age 37

Secondary care



63% ♂
37% ♀
Mean age 41

Pharmacies

58% ♂
42% ♀
Mean age 39

Prisons

99% ♂
1% ♀
Mean age 36

Baseline characteristics of HCV positive patients – Diverse populations in primary care and IEPS

		Primary care	Secondary care	Drug treatment services	Pharmacy	IEPS	Prison
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Injecting drug use	Yes	48 (48)	96 (71)	91 (100)	72 (100)	53 (100)	84 (91)
	No	51 (52)	39 (29)	0 (0)	0 (0)	0 (0)	8 (9)

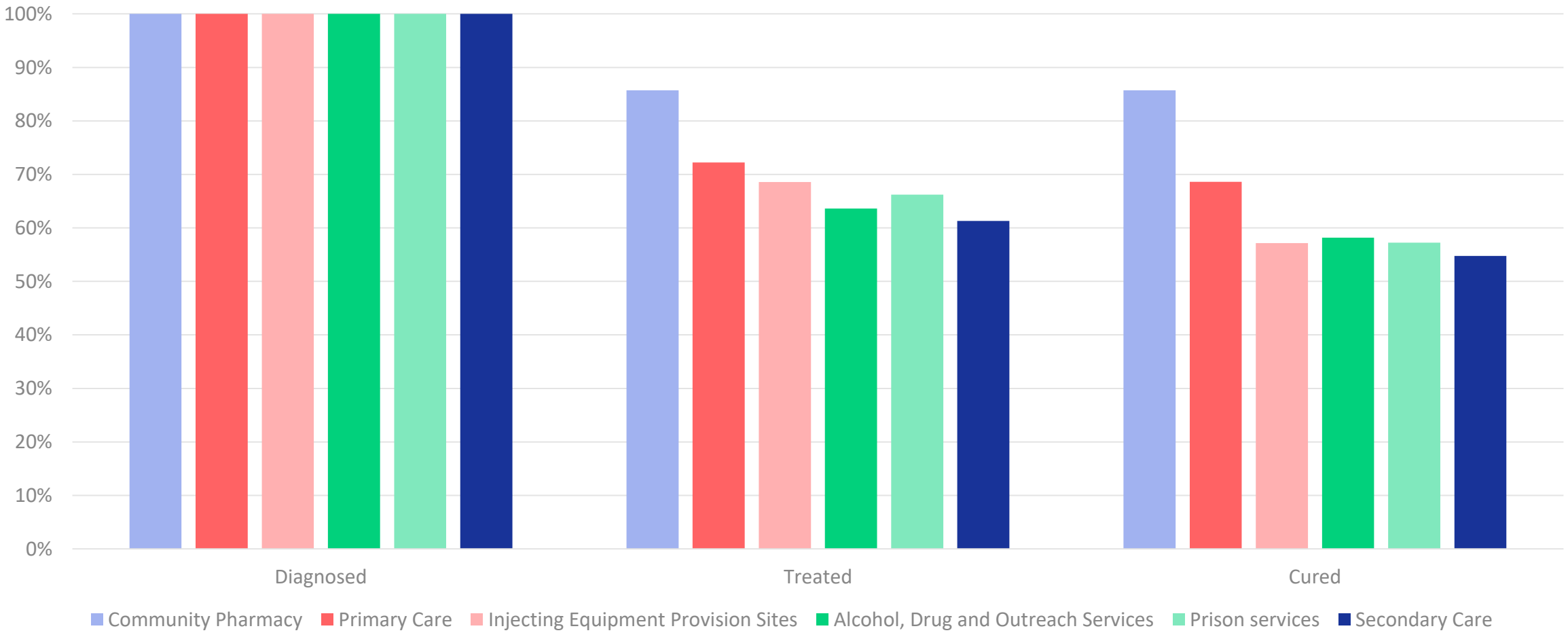
These numbers represent all individuals with a positive HCV IgG sample when tested in the respective testing sites between 2015-2017.

Baseline characteristics of HCV positive patients – Diverse populations in primary care and IEPS

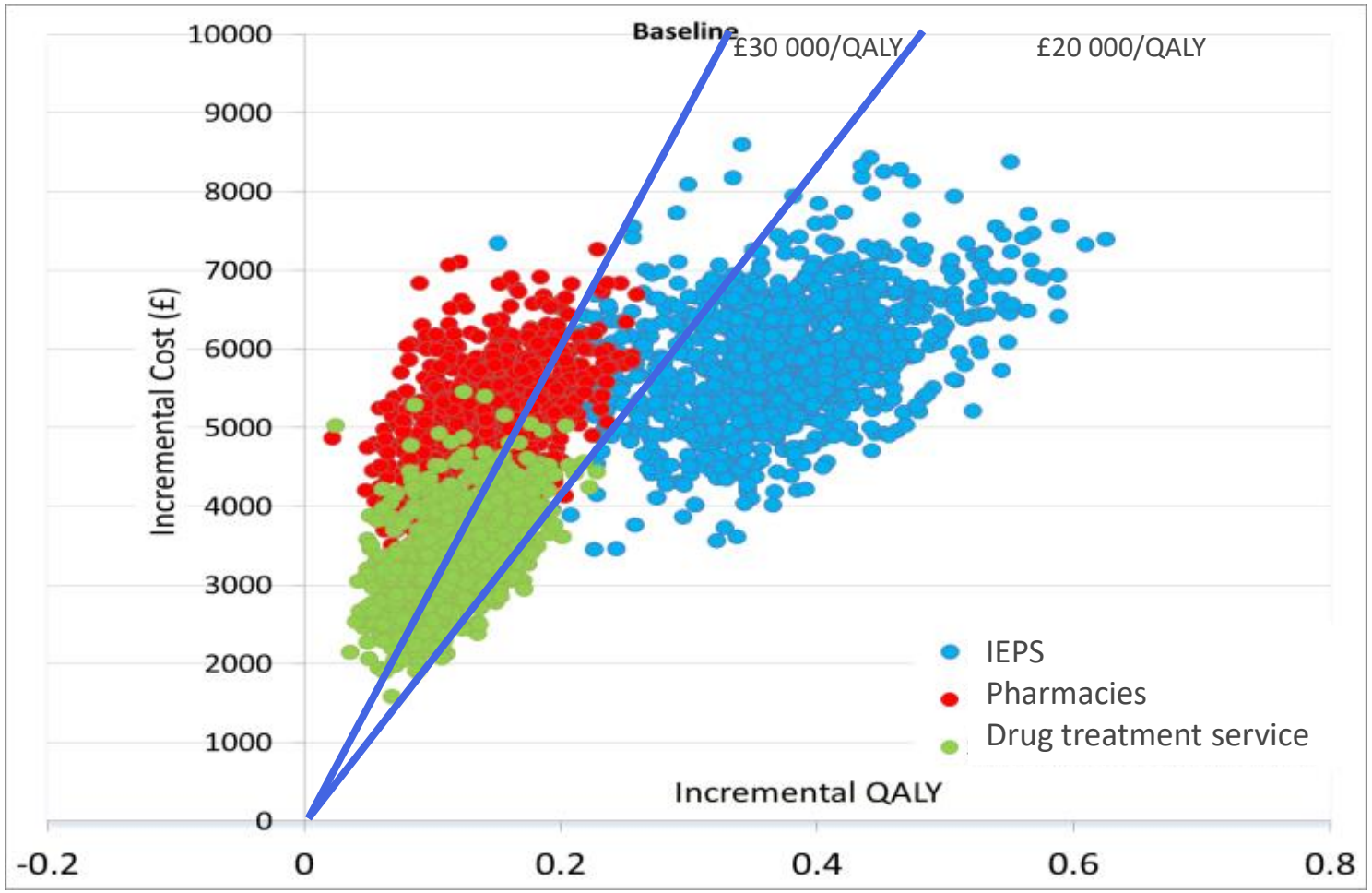
		Primary care	Secondary care	Drug treatment services	Pharmacy	IEPS	Prison
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Cirrhosis	Yes	17 (17)	8 (6)	3 (3)	1 (1)	1 (2)	2 (2)
	No	82 (83)	127 (94)	88 (97)	71 (99)	52 (98)	98 (98)

These numbers represent all individuals with a positive HCV IgG sample when tested in the respective testing sites between 2015-2017.

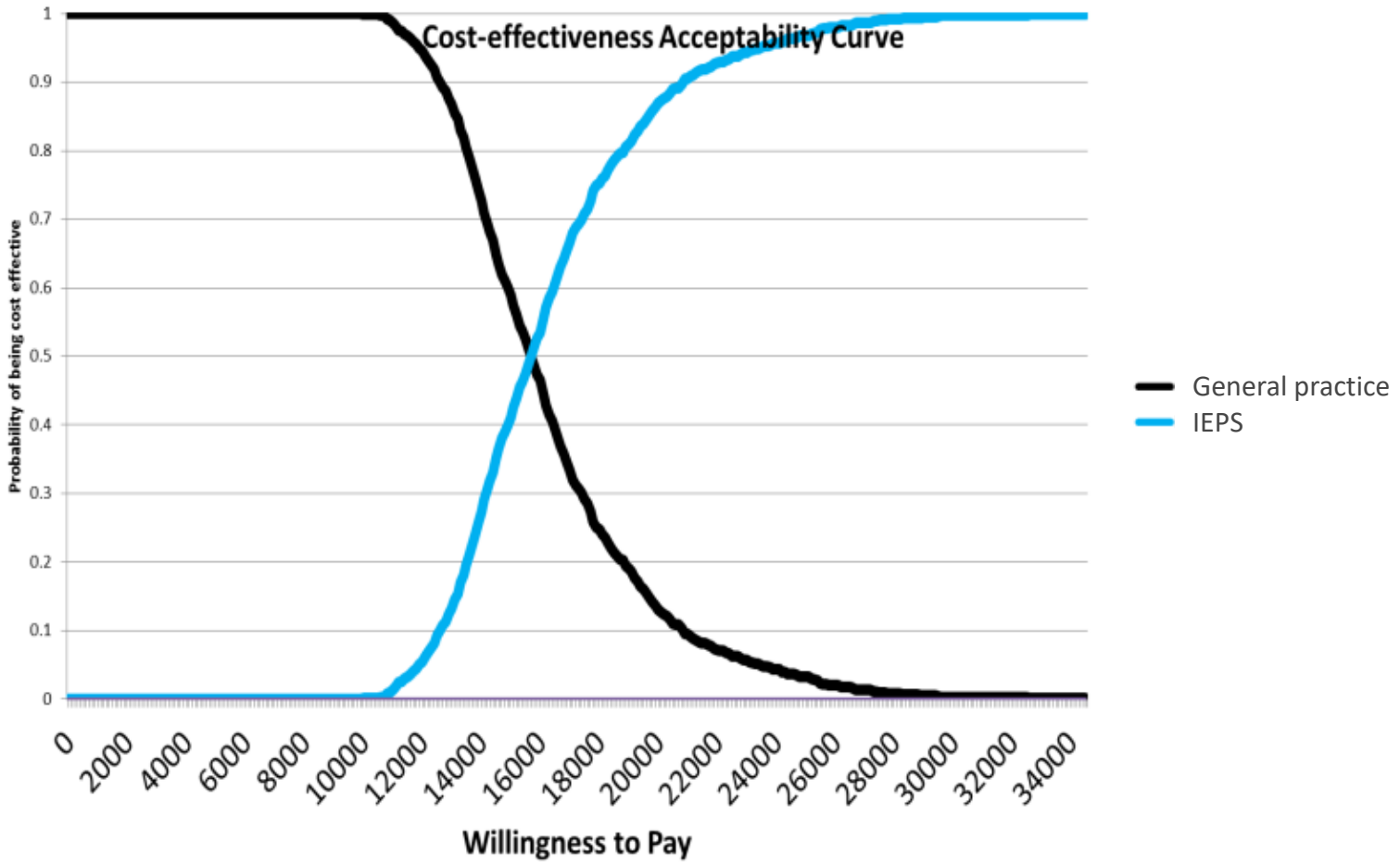
Engagement in treatment for different testing sites



Cost effectiveness of targeted pathways for PWIDs



Cost effectiveness of primary care vs IEPS



Conclusion

→ Testing for HCV has increased markedly over the last 20 years

→ As prevalence falls diagnosing new patients becomes more difficult

→ Pathways targeting populations most at risk of HCV are more effective at yielding new HCV diagnoses than standard pathways.

→ Testing in the IEPS is the most cost effective pathway for our cohort

→ In order to diagnose >90% and treat >80% we need to utilise all available pathways

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