TESTING PERSONS IN PRISON FOR HEPATITIS C VIRUS

A SERVICE IMPROVEMENT PROJECT IN TAYSIDE, SCOTLAND

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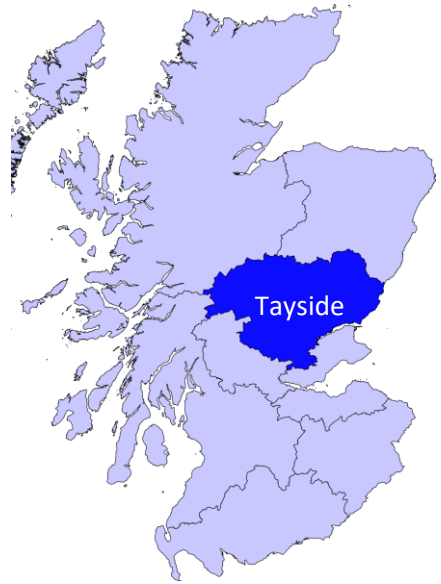


Disclosures

- CB has no disclosures.
- JFD reports received personal honoraria for lectures and institutional research grants from MSD, AbbVie, Gilead, Roche and Janssen; grants and personal fees from Abbvie; grants and personal fees from Gilead, grants and personal fees from MSD outside the submitted work.
- Point of care testing system provided at zero cost by Cepheid for this evaluation.

Background and aims

- Incarcerated persons are at high risk of acquiring hepatitis c virus (HCV).
- As part of regional elimination programme, point-of-care (PoC) HCV RNA testing was piloted in large all-male medium security prison.
- Existing HCV testing in prison by dried blood spot or venous samples sent to tertiary laboratory to process.
- Aimed to reduce the time from reactive RNA test to treatment initiation for those in prison, and increase testing capacity.

Methods

- PoC testing integrated into nurse-led BBV care team alongside standard testing on site in prison clinic from Dec ’19–Mar ’21.
- PoC tests performed with 4-module GeneXpert System.
- Choice of which test to use made between practitioner and patient.

Analysis

- Data was collected for the evaluation period and, for comparison, the twelve months prior.
- Descriptive statistics were used to derive testing rates and times.
- Differences in testing rates explored using Mann-Whitney U test.
- Time from test to treatment initiation between groups analysed using Cox proportional hazards modelling.
  - Adjusted for age, genotype, prior treatment, and receipt of opioid agonist therapy (OAT).

Results: testing

- From December 2019 – March 2021: 167 GeneXpert HCV tests administered to 105 individuals.

Reasons for conducting HCV tests using the Cepheid GeneXpert, HMP.

Reason for test	n – (%)
Routine/diagnostic	61 (36.5)
Prior SVR/re-infection check	36 (21.6)
On-treatment response check	38 (22.8)
End of treatment response check	13 (7.7)
SVR check	19 (11.4)
Total	167 (100)

Abbreviations: HCV, hepatitis c virus; HMP, her majesty's prison service; SVR, sustained virologic response.

Total number of HCV tests recorded during reference and evaluation periods.

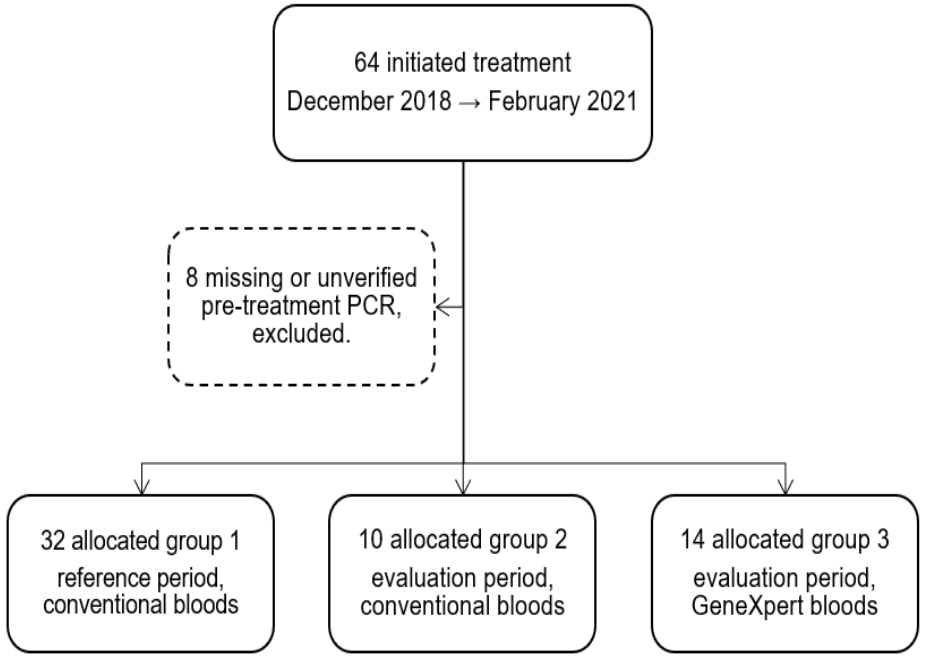
Reference period		Evaluation period		
Month	Total tests	Month	Total tests	Proportion GeneXpert*
December 2018	21	December 2019	49	16%
January 2019	23	January 2020	60	33%
February 2019	25	February 2020	61	48%
March 2019	50	March 2020	26	54%
April 2019	41	April 2020	0	0%
May 2019	47	May 2020	4	0%
June 2019	25	June 2020	17	35%
July 2019	41	July 2020	11	64%
August 2019	42	August 2020	57	21%
September 2019	38	September 2020	36	36%
October 2019	23	October 2020	33	64%
November 2019	72	November 2020	16	63%
		December 2020	25	48%
		January 2021	20	30%
		February 2021	30	23%
		Up to 5 March 2021	6	33%
Overall	448	Overall	451	37%

(U=78, *p*=.466)

Abbreviations: HCV, hepatitis c virus.
*Proportions rounded to nearest whole number.

Results

Descriptive outcomes



Days from HCV RNA test to treatment initiation by test type, December 2018-March 2021 (n=56)			
Parameter	(1) Conventional testing 2018-19	(2) Conventional testing 2019-21	(3) GeneXpert 2019-21
Mean (95% CI)	43.09 (29.31–56.88)	57.50 (8.59–106.41)	14.64 (9.08–20.20)
Median	31.00	31.50	11.00
Abbreviations: HCV, hepatitis c virus; RNA, ribonucleic acid; CI, confidence interval.			

Results

Time to event analysis

Cox regression coefficients for all covariates, conventional testing 2018-19 as referent.

Variable	Wald	Adjusted Hazard Ratio (95% CI)	p
Conventional testing 2018-19	8.15		<.05
Conventional testing 2019-21	.05	.92 (.42–2.00)	.826
GeneXpert 2019-21	7.14	3.87 (1.43–10.45)	<.01
Age	1.42	.97 (.93–1.02)	.233
Genotype	.00	.99 (.47–2.09)	.991
OAT	1.42	.66 (.33–1.31)	.660
Treatment experienced	.09	.90 (.47–1.73)	.904

Abbreviations: CI, confidence intervals; OST, opioid agonist therapy.
Model fit: $X^2(6, 56) = 24.97$, $p = <.001$

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Conventional testing 2018-19	.05	1.09 (.50–2.39)	.826
GeneXpert 2019-21	6.84	4.23 (1.43–12.46)	<.01
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Abbreviations: CI, confidence intervals; OST, opioid agonist therapy.
Model fit: $X^2(6, 56) = 24.89$, $p = <.001$

Conclusions

- Integrating PoC RNA testing into routine nurse-led clinics on site in the prison environment is feasible.
- No testing capacity increase, but rates held through COVID-19. Xpert HCV VL Fingerstick constituted 37% of all tests. Helpful when laboratory experienced excess demand.
- Those tested with the GeneXpert had significantly higher likelihood of starting treatment quicker than those tested conventionally.
- Useful in remand context, where quick transition to treatment key.

NHS Tayside

University of Dundee

Thank you