Liver Disease Burden and Clinical Follow-Up During a Liver Health Promotion Intervention Integrating Non-Invasive Liver Disease Screening in Drug and Alcohol Settings: The LiveRLife Study

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Partners


UNSW
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Hepatitis
NSW


AIVL


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ST VINCENT'S
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St Vincent de Paul Society NSW
Support Services
good works


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Developing the campaign

PHASE I: Message Development

- Targeted focus groups with community peers
- Assess knowledge, attitudes & beliefs about liver disease, testing and treatment

PHASE II: Message Testing

- Focus test the messaging and resources with community peers

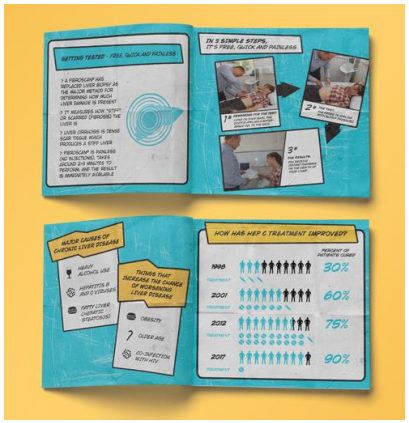
OUTCOME

- Target one achievable behavior

Marshall A, et al. *Int J Drug Policy* 2015

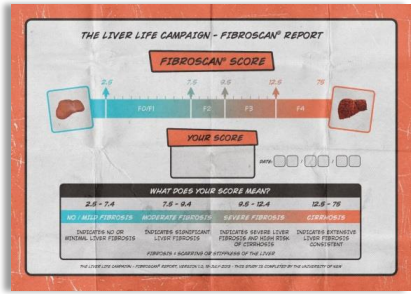
LiveRLife resources

☑ **PRINTED RESOURCE**



☑ **POSTER CAMPAIGN**

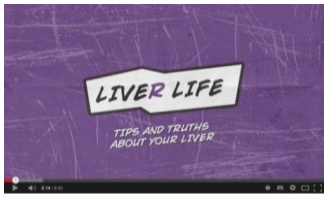
☑ **FIBROSCAN REPORT**



☑ **STUDY WEBSITE**

LIVERLIFE.ORG.AU

☑ **SHORT FILM**



Marshall A, et al. *Int J Drug Policy* 2015

Developing the campaign

PHASE III: Campaign Implementation

To evaluate the impact of a healthy liver campaign on liver disease knowledge, assessment and treatment among people attending drug & alcohol services

Inclusion	Exclusion
☑ ≥18yrs of age	☒ Pregnant women
☑ History of injecting drug use	

Recruitment

- Through one community-based primary health care clinic, two opioid substitution treatment clinics, and one medically supervised injecting centre in New South Wales, Australia

Marshall A, et al. *Int J Drug Policy* 2015

Enhanced liver disease assessment – FibroScan®

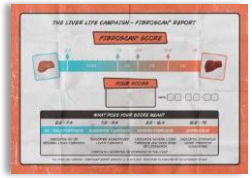
Study Enrolment

Informed consent

Pre-Assessment Survey

Self-Administered Survey
- Demographics
- Injecting history
- Treatment history
- General liver knowledge
- FibroScan willingness

FibroScan



Nurse Consultation

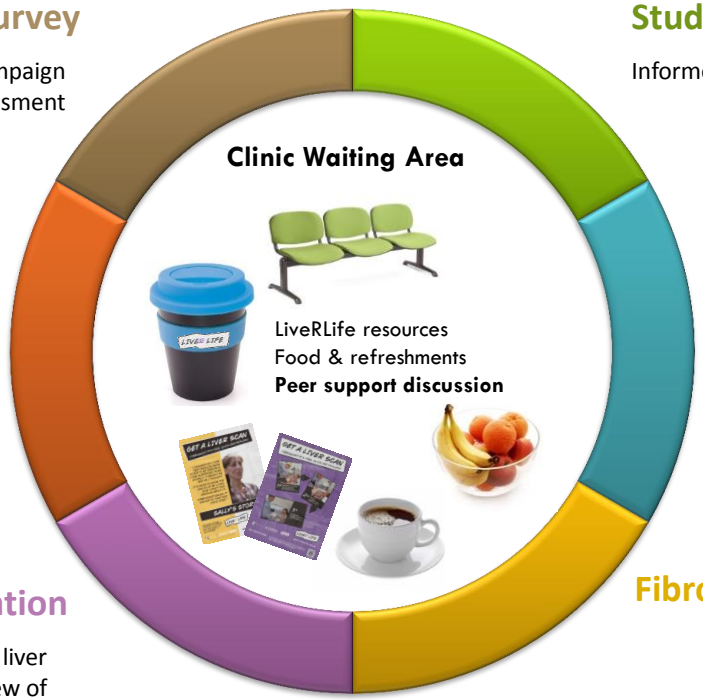
Assessment of liver health and review of FibroScan results

Dried Blood Spot

HCV antibody and RNA analysis

Post-Assessment Survey

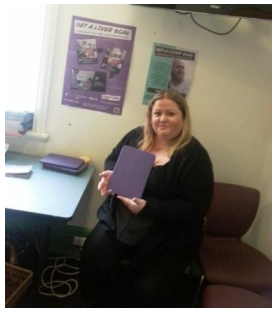
FibroScan and campaign assessment



Marshall A, et al. *Int J Drug Policy* 2015

Campaign days

- A team of staff attended each campaign day
- Support from the service was key to building interest and participation
- Clients were keen to participate and have their liver health assessed
- An opportunity to engage individuals with significant disease staging



Participant characteristics

- LiveRLife has been run at 4 clinics (n=253)

70% HCV RNA+

43 Average age

68% Male

21% Aboriginal ethnicity

90% Born in Australia

7% Full or part time employment

27% Completed high school or higher education

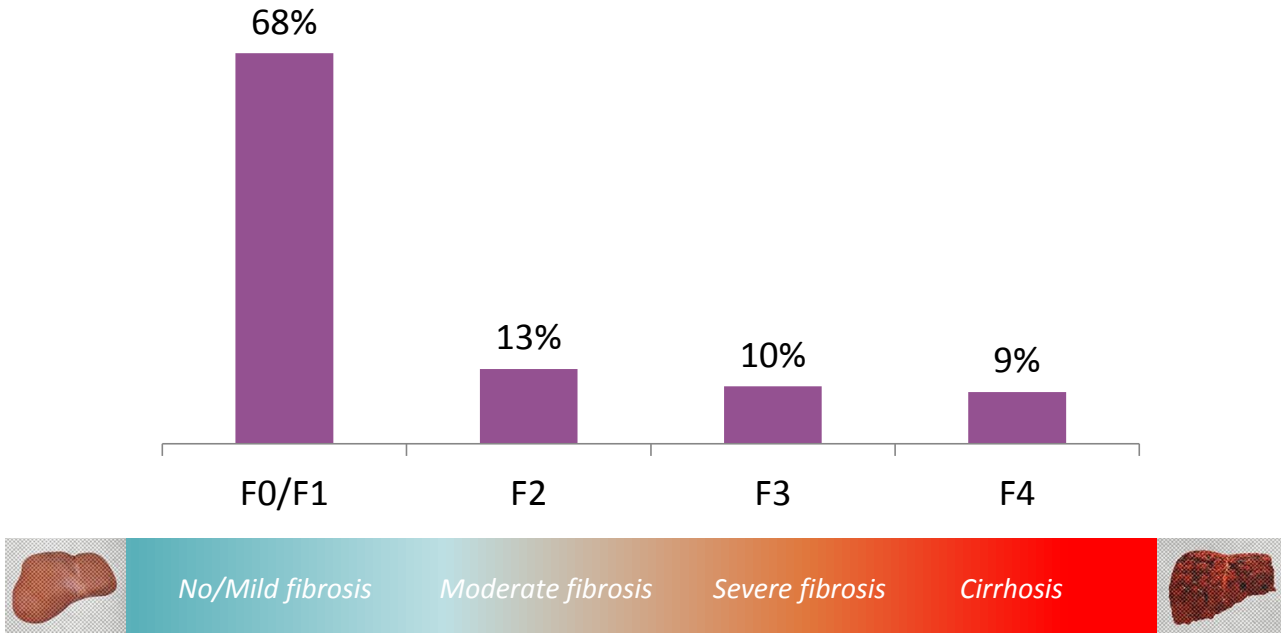
51% Rented housing

66% Ever been in prison

33% in the last 12 months

8

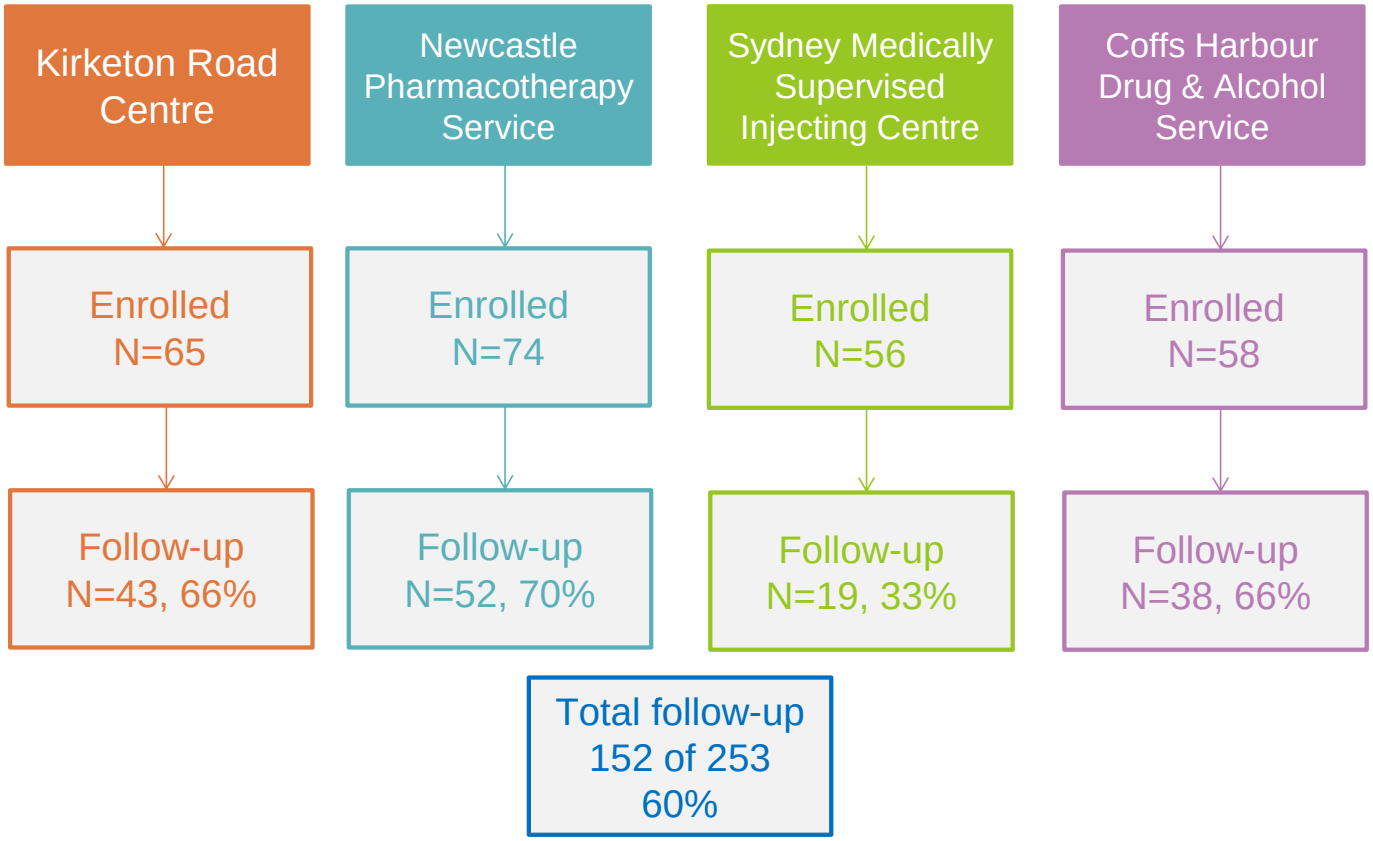
Disease staging



Factors associated with F3/4 disease staging

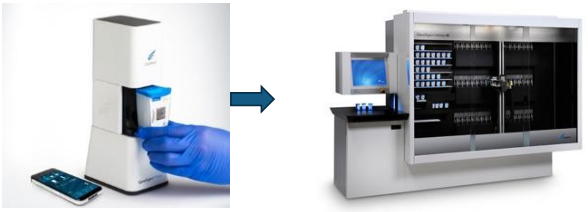
	Number with F3/4 (%)	Unadjusted OR (95% CI)	*P*
Age			
<35 years	3 (5%)	1.00	-
>=35-<45 years	13 (16%)	3.69 (1.00, 13.58)	0.050
≥45 years	29 (31%)	8.48 (2.45, 29.31)	0.001
Gender			
Female	9 (13%)	1.00	-
Male	34 (21%)	1.82 (0.82, 4.02)	0.142
HCV RNA			
Undetectable	9 (13%)	1.00	-
Detectable	35 (23%)	2.09 (0.95, 4.63)	0.068

Clinical follow-up



Xpert® HCV Viral Load point-of-care assay

- Automated, self-contained, single use, random access
- European CE-IVD approved (plasma)
- Single platform for integration (HIV, HPV, TB)
- Minimal training, rapid (60-105min), capillary blood (alpha testing)
- Multiple configurations



Method: Venous blood and finger-prick samples

Venous whole blood

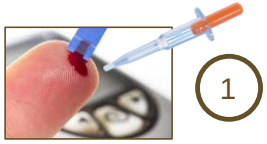
1 Collect venous whole blood by venepuncture

2 Centrifuge

3 Load plasma into Xpert ® HCV Viral load (RUO) cartridge

4 Result < 100min

Finger-prick capillary blood (interim)



1 Collect 100µL capillary blood by finger-prick into a Minivette

2 Load blood into Xpert ® HCV Viral load (RUO) cartridge

3 Add 1mL dilution buffer

4 Result < 100min

Gold standard comparator: Abbott RealTime HCV assay, v7, m2000

Results: Sensitivity and specificity (detectable)

Abbott plasma	Xpert® HCV VL plasma Undetected -	Detected +	Total
Undetected -	114	1	115
Detected +	0	51	51
Total	114	52	166
Sensitivity	**100%** (95%CI, 93-100%)		
Specificity	**99.1%** (95%CI, 95.3-100%)		

Abbott plasma	Xpert® HCV VL finger-prick Undetected -	Detected +	Total
Undetected -	111	2	113
Detected +	2	47	49
Total	113	49	162
Sensitivity	**95.9%** (95%CI, 86-99.5%)		
Specificity	**98.2%** (95%CI, 93.8-99.8%)		

One discrepant result:

1201-61410-018 Abbott = 0 Xpert = 3,380,000

Four discrepant results:

1201-61410-018 Abbott = 0 Xpert = 7,686,000

1201-61249-030 Abbott = 38 Xpert = 0

1201-61249-104 Abbott = 0 Xpert = 5 (<110)

1201-61223-002 Abbott = <12 Xpert = 0

Grebely J, Lamoury F et al, manuscript in prep (2016)

Results: Sensitivity and specificity (quantifiable)

Abbott plasma	Xpert® HCV VL plasma Unquantifiable	Quantifiable	Total
Unquantifiable	114	0	114
Quantifiable	1	48	49
Total	115	48	163
Sensitivity	**98%** (95%CI, 89.1-99.9%)		
Specificity	**100%** (95%CI, 96.8-100%)		

Abbott plasma	Xpert® HCV VL finger-prick Unquantifiable	Quantifiable	Total
Unquantifiable	112	0	112
Quantifiable	1	46	47
Total	113	46	159
Sensitivity	**97.9%** (95%CI, 88.7-99.9%)		
Specificity	**100%** (95%CI, 96.8-100%)		

Note: Outlier excluded

One discrepant result:

1201-61249-030 Abbott = 38, Xpert = <10

One discrepant result:

1201-61249-030 Abbott = 38, Xpert = 0

Excluding those on treatment, n=10 (69, 4.8%)

Sensitivity	**97%** (95%CI, 88-99.9%)
Specificity	**100%** (95%CI, 96.7-100%)

Sensitivity	**97.7%** (95%CI, 87.7-99.9%)
Specificity	**100%** (95%CI, 96.7-100%)

Grebely J, Lamoury F et al, manuscript in prep (2016)

Conclusions

- Demonstrated considerable liver disease burden in this population
- A high proportion attended post-LiveRLife clinical follow-up
- Provided an opportunity to address other health issues (e.g. HAV/HBV vaccinations)
- Developed key partnerships between services, clinical providers, and researchers
- Demonstrated the feasibility of interventions to enhance health outcomes among people in drug and alcohol settings

It's good to know the health of my liver, now I don't feel anxious about it. FibroScan makes it easier to take that first step!

SALLY'S STORY

Future directions

- Additional 250 participants have been recruited from homelessness settings, drug and alcohol clinics and NSPs (including POC HCV RNA testing) in Australia
- Planned project to evaluate LiveRLife in Bangkok, Thailand in collaboration with HIV-NAT
- Simplified LiveRLife intervention planned to increase testing, linkage to care and DAA therapy for ETHOS-II study (to begin in March 2017)

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St Vincent de Paul Society NSW
Support Services
good works

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NSW Government Health
South Eastern Sydney Local Health District

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