



Enhancing liver disease screening and hepatitis C treatment uptake among people who inject drugs

Alison Marshall ^{a,b} | June 19, 2018

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PhD Research

- Liver disease knowledge and acceptability of non-invasive liver disease assessment among PWID who attend drug and alcohol centres
- Understanding of liver disease assessment among PWID
- HCV DAA reimbursement restrictions for the treatment of HCV infection by jurisdiction in Canada (n=13)
- HCV DAA reimbursement restrictions for the treatment of HCV infection by country in Europe (n=35)

HCV infection among PWID



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Figure 4 from Degenhardt L et al. Lancet Glob Health. 2017. doi:10.1016/S2214-109X(17)30375-3.

Chapter 1

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International Journal of Drug Policy

journal homepage: www.elsevier.com/locate/drugpo

Contents lists available at ScienceDirect



Research paper

Liver disease knowledge and acceptability of non-invasive liver fibrosis assessment among people who inject drugs in the drug and alcohol setting: The LiveRLife Study

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S.C. Jones^b, N. Bath^d, D. How-Chow^e, J. Byrne^f, P. Harvey^g, A. Dunlop^{h,i}, M. Jauncey^f,
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Aims

To assess:

- Factors associated with baseline knowledge of HCV and liver disease
- Acceptability of transient elastography (TE) assessment (FibroScan®)
- Willingness and intent to receive HCV treatment

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Methods

Study Design

Liver health promotion campaign designed to enhance liver disease assessments via FibroScan® in the drug and alcohol setting (n=4, based in New South Wales) among persons with a history of injection drug use

Study Population

- Prospective cohort design
- Aged ≥ 18 years, history of IDU
- No liver biopsy or FS in prior two years
- No current or previous HCV Tx
- Cannot be pregnant

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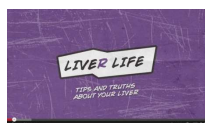
Methods

LiveRLife Resources

PRINTED RESOURCE



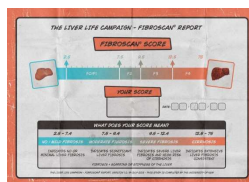
SHORT FILM



CAMPAIGN POSTERS



FIBROSCAN REPORT



STUDY WEBSITE

LIVELIFE.ORG.AU



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LIVER LIFE

Campaign Day

Post-Assessment Survey

FibroScan acceptability (Likert Scale)



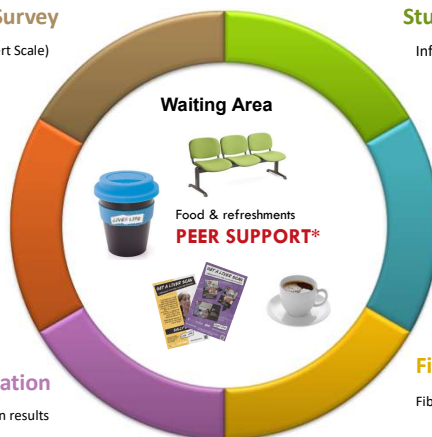
Dried Blood Spot

HCV RNA testing



Nurse Consultation

Review FibroScan results



Study Enrolment

Informed consent

Pre-Assessment Survey

Demographics
Injecting history, behaviour
Alcohol use (AUDIT-C)
Baseline HCV & liver knowledge
FibroScan willingness
Tx willingness & intent (Likert scale)



FibroScan

FibroScan Score



LiveRLife population (n=253)

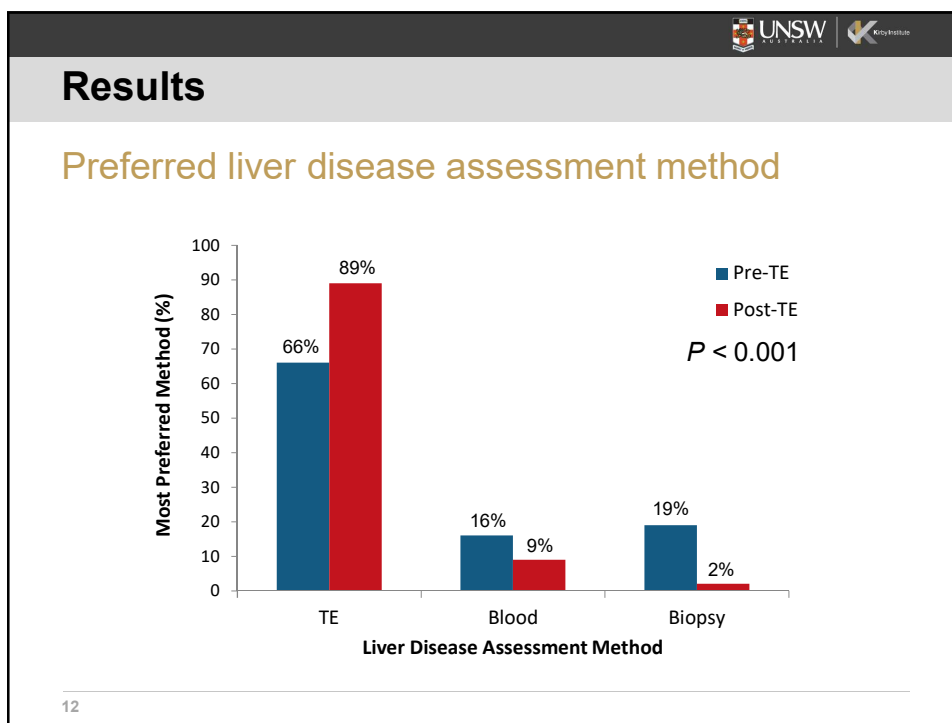
- Avg. age 43 yrs., 68% male, 23% ATSI, 75% HCV⁺ (68% RNA⁺)
- 27% high school education, 71% OST, 86% govern. assistance
- 71% injected in the past month, 34% high risk alcohol (AUDIT-C)
- 60% returned for 2-4 wk. LiveRLife follow-up
- 19% advanced fibrosis (\geq F3; \geq 9.5kPa)

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Results

- Median knowledge score 16/23
 - Chronic liver disease: using heroin (18%), stimulants (12%)
 - Positive HCV antibody test: (28%)
- Less than daily injection (AOR 5.01; 95% CI, 2.64-9.51) and no daily injection in the past month (AOR 3.54; 95% CI, 1.80-6.94) were associated with high knowledge (\geq 16)
- 88% definitely or somewhat willing to receive HCV Tx
- 56% intended to start Tx in the next 12 mons

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- ## Discussion
- Increased understanding of liver disease burden in a community-based sample of PWID
 - Support for greater use of non-invasive liver disease assessment
 - DAA era: Liver disease assessment still recommended prior to therapy and for some, ongoing monitoring post-SVR
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Chapter 2



International Journal of Drug Policy 47 (2017) 153–160



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Research paper

'I didn't want to let it go too far.' The decisions and experiences of people who inject drugs who received a liver disease assessment as part of a liver health promotion campaign: The LiveRLife study



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Qualitative follow-up study

The study aims were to assess...

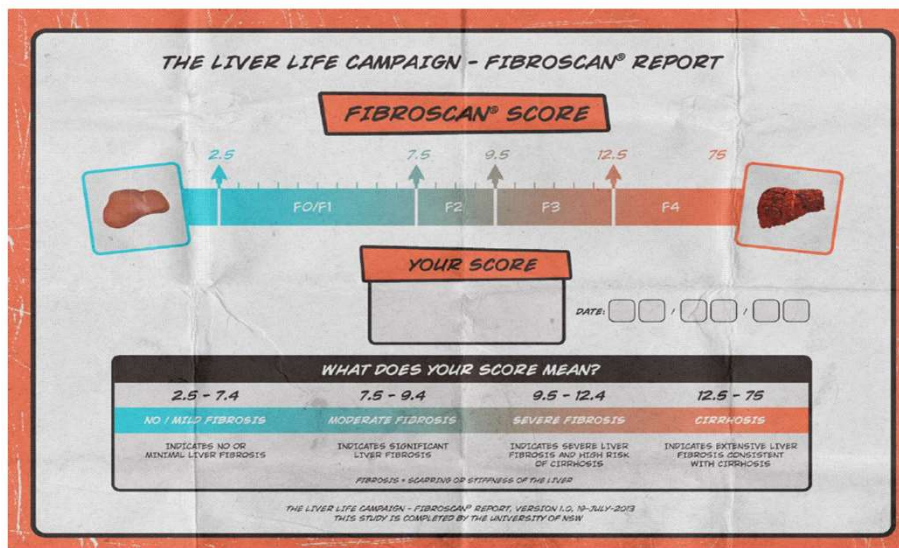
- Motivations for receiving a liver disease assessment
- Understanding of HCV infection and its association with liver disease
- Interpretation of FibroScan® score and subsequent health behaviours

Health Literacy: the cognitive and social skills which determine the motivation and ability of individuals to gain access to, **understand and use information** in ways which promote and maintain good health

(WHO, 2016)

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LiveRLife Resource



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Methods

	Mild/mod. fibrosis (F0-F2)	Advanced fibrosis (F3/F4)	Total
Attended follow-up			
No follow-up			



Study Population

Participation in LiveRLife
FibroScan® score

Data Collection

2 OSTs, 1 injecting centre
Semi-structured interviews
Audio-recorded; transcribed

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Results

	Mild/mod. fibrosis (F0-F2)	Advanced fibrosis (F3/F4)	Total
Attended follow-up	11 ₍₇₇₎	12 ₍₂₂₎	23 ₍₉₉₎
No follow-up	8 ₍₆₀₎	2 ₍₁₃₎	10 ₍₇₃₎
	19 ₍₁₃₇₎	14 ₍₃₅₎	33 ₍₁₇₂₎

Study Population
Participation in LiveRlife FibroScan® score

Data Collection
2 OSTs, 1 injecting centre
Semi-structured interviews
Audio-recorded; transcribed
Thematic analysis

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Results (n=33)

- Median age 48 yrs., 79% male, 21% ATSI, 70% HCV⁺
- 30% high school education, 61% time in prison
- 73% injected in past 6 mons., 30% high risk alcohol use
- 70% returned for 2-4 wk. LiveRlife follow-up
- 42% advanced fibrosis ($\geq F3$; $\geq 9.5\text{kPa}$)

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Results

Motivation to receive liver disease assessment

- Opportunity to gain access to new knowledge

*Just to check the liver to see how it was because **I knew I had the hep.***

- James, F0-F2, follow-up, age 54 yrs.

- Incorrect connections between drug use and chronic liver disease
 - Supported by baseline LiveRLife data (knowledge survey)
 - Sources of incorrect health knowledge

*I wanted to really see **how the drugs really do affect your liver.***

- Sam, F0-F2, follow-up, age 47 yrs.

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Results

Interpretation of FibroScan® score

- The majority had a correct interpretation of liver disease based on score

*[The healthcare practitioners] said it was in **good condition for someone who's been using like I have.** The only drug I use is amphetamines now; they're probably the better ones for you.*

- Jack, F0-F2, follow-up age 59 yrs.

- Scores prompted discussions regarding health behaviours

I: As soon as you found out your score, did you tell anyone?

*P: I went up to [nearby clinic] and I saw my doctor and let [them] know and then from there. **I slowly reduced on my alcohol drinking.***

- Stacy, F0-F2, follow-up, age 32 yrs.

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Results

Interpretation of FibroScan® score

- FibroScan® scores changed perceptions of health (+/-) for some
- Linkage to HCV therapies was prominent in healthcare discussions

*It's only because of the feedback, the FibroScan® I've had done...all that has made me **just keep wanting to go forward**.*

- Derek, F0-F2, no follow-up, age 52 yrs.

*I just imagined that it would be less than what it was and I was shocked...they showed me on the scale where it was...straight away I started panicking. I didn't think it would be anywhere near that bad....**I didn't show any signs of hep C.***

- Jacob, F3/F4, follow-up, age 47 yrs.

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Results

Interpretation of FibroScan® score

- Importance of developing a tool that can be understood by others
- FibroScan® scorecard served as a visual reminder

*I remember that this was the **first FibroScan® that really told me a lot**...my mother saw it and then she pointed out where I was...the degree of cirrhosis, it made me definitely want to follow up with [HCV] treatment. **Hearing it but then seeing it in front of my eyes...it just seemed to be two completely different things**...I'd never really been clean in any part of my adult life until that piece of paper.*

- Paul, F3/F4, follow-up, aged 43 yrs.

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Discussion

- Confusion about drug use and connection to liver health persists
- Loss to research follow-up ≠ lack of engagement in services
- Similar tools needed to improve capacity to understand
- DAA era: Expected results if replicated today
- DAA era: Managing expectations post-Tx
- DAA era: Discussions around illicit drug use following Tx
- DAA era: Discussions concerning alcohol use

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Chapter 3

CMAJ OPEN

Research

Restrictions for reimbursement of direct-acting antiviral treatment for hepatitis C virus infection in Canada: a descriptive study

Alison D. Marshall MA, Sahar Saeed MSc, Lisa Barrett MD PhD, Curtis L. Cooper MD MSc, Carla Treloar PhD, Julie Bruneau MD MSc, Jordan J. Feld MD MPH, Lesley Gallagher RN, Marina B. Klein MD MSc, Mel Krajden MD, Naglaa H. Shoukry PhD, Lynn E. Taylor MD, Jason Grebely PhD; the Canadian Network on Hepatitis C (CanHepC)

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Aims

To appraise reimbursement criteria in Canada for:

- simeprevir w/PEG-IFN/RBV (Galexos®)
- sofosbuvir w/PEG-IFN/RBV or RBV (Sovaldi®)
- ledipasvir-sofosbuvir w/ or w/o RBV (Harvoni®)
- paritaprevir-ritonavir-ombitasvir plus dasabuvir w/ or w/o RBV (Holkira Pak®)

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Methods

- Primary outcomes
 - Minimum fibrosis stage required (METAVIR or equivalent)
 - Drug and/or alcohol use restrictions
 - Prescriber-type restrictions
 - HIV co-infection restrictions
- Data collection
 - April 2015 to June 2016
 - Ministry of Health websites; online drug formularies
- Data were organized with descriptive statistics with Excel;
Two authors independently cross-checked categorisation of outcomes and documentation

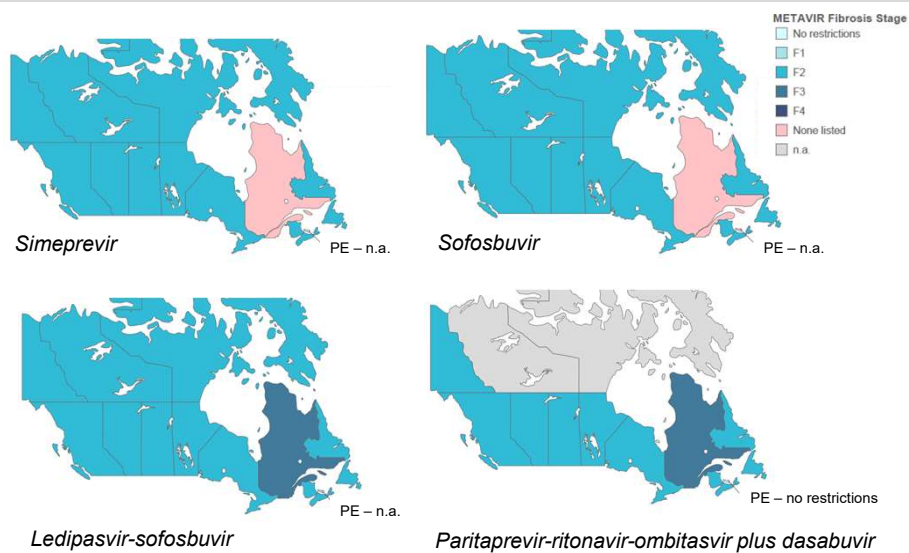
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Results

- 82-92% of provinces/territories limited access to persons with moderate fibrosis ($\geq F2$)
- There were no drug and alcohol use restrictions
- Quebec did not reimburse simeprevir or sofosbuvir for HIV co-infected persons
- Up to half (50%) restricted prescriber type to specialists only

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Minimum fibrosis stage by therapy



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Discussion

- International clinical guidelines do not recommend prioritisation by disease stage
- Tx across all disease stages is cost effective (CADTH review)
- DAA era: prevent onward transmission, receive the benefits of SVR (e.g. quality of life outcomes), and maintain healthcare engagement
- In mid-2018, Canada no longer has liver disease restrictions for DAA access

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Drugs for Chronic Hepatitis C Infection: Recommendations Report. CADTH Therapeutic Review. November 2015. Available from: https://www.cadth.ca/sites/default/files/pdf/TR0008_HepatitisC_RecsReport_e.pdf

Chapter 4

THE LANCET Gastroenterology & Hepatology

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All Content

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Health Policy

Restrictions for reimbursement of interferon-free direct-acting antiviral drugs for HCV infection in Europe

Alison D Marshall, MA^{1,2}, Evan B Cunningham, BSc, Stine Nielsen, MSc, Alessio Aghemo, PhD, Prof Hannu Alho, PhD, Markus Backmund, PhD, Philip Bruggmann, MD, Olav Dalgard, PhD, Carole Seguin-Devaux, PhD, Prof Robert Flisiak, PhD, Prof Graham R Foster, PhD, Liana Gheorghe, PhD, David Goldberg, MD, Ioannis Goulis, MD, Prof Matthew Hickman, PhD, Patrick Hoffmann, PhD, Prof Ligita Jancoriené, PhD, Peter Jarcuska, PhD, Martin Käberg, MD, Prof Leondios G Kostrikis, PhD, Mihály Makara, MD, Matti Maimets, PhD, Rui Tato Marinho, PhD, Mojca Matičič, PhD, Suzanne Norris, PhD, Sigurður Ólafsson, MD, Anne Øvrehus, MD, Prof Jean-Michel Pawlotsky, PhD, James Pocock, MD, Geert Robaey, PhD, Carlos Roncero, PhD, Marieta Simonova, PhD, Jan Sperl, PhD, Michele Tait, BSc, Ieva Tolmane, PhD, Stefan Tomaselli, MSocEcs, Marc van der Valk, PhD, Prof Adriana Vince, PhD, Prof Gregory J Dore, PhD, Jeffrey V Lazarus, PhD[†], Jason Grebely, PhD[†] on behalf of the International Network on Hepatitis in Substance Users (INHSU)

[†] Contributed equally

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Aims

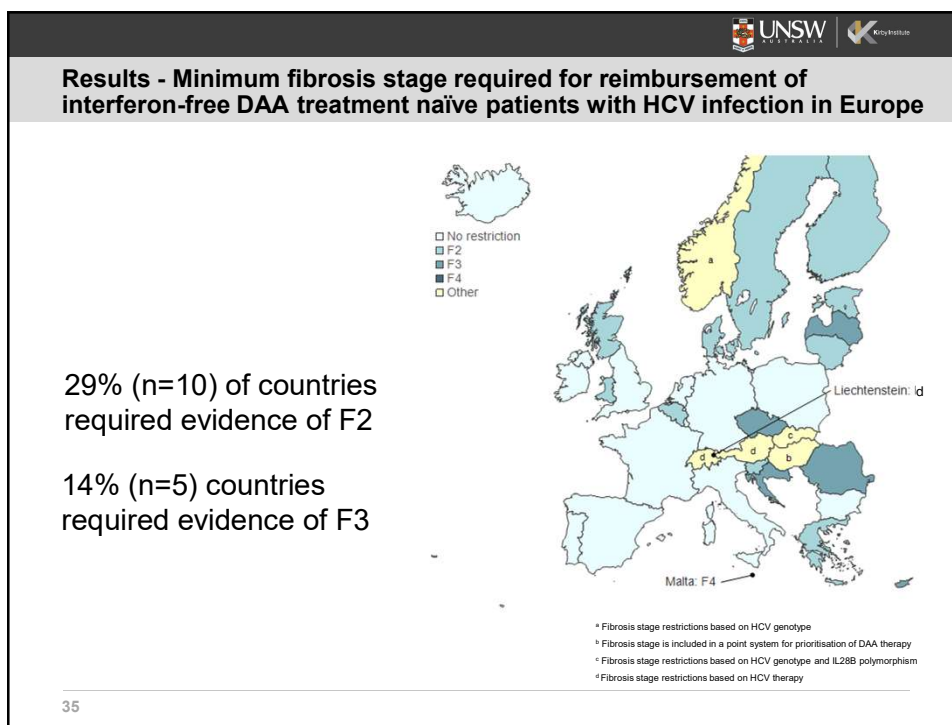
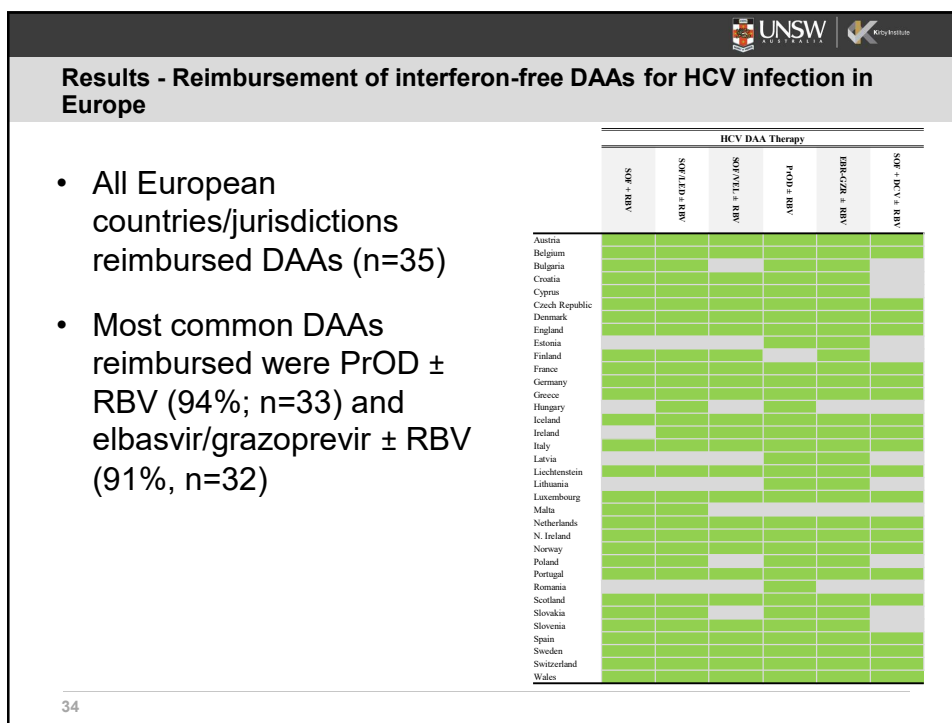
- To review the availability of interferon-free DAA therapy among EU/EEA countries and Switzerland
 - sofosbuvir + ribavirin (Sovaldi®)
 - sofosbuvir/ledipasvir + ribavirin (Harvoni®)
 - sofosbuvir/velpatasvir + ribavirin (Epclusa®)
 - ombitasvir/paritaprevir/ritonavir + dasabuvir + ribavirin (Viekirax®)
 - elbasvir-grazoprevir + ribavirin (Zepatier®)
 - sofosbuvir + daclatasvir + ribavirin (Daklinza®)
- To review national criteria for interferon-free DAA therapy reimbursement among EU/EEA countries and Switzerland

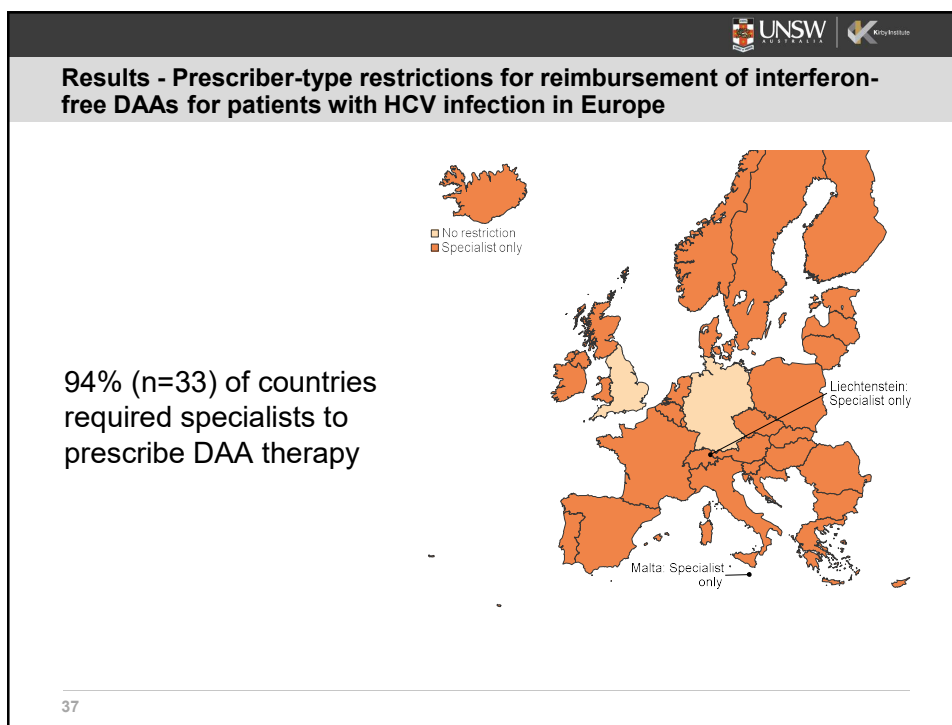
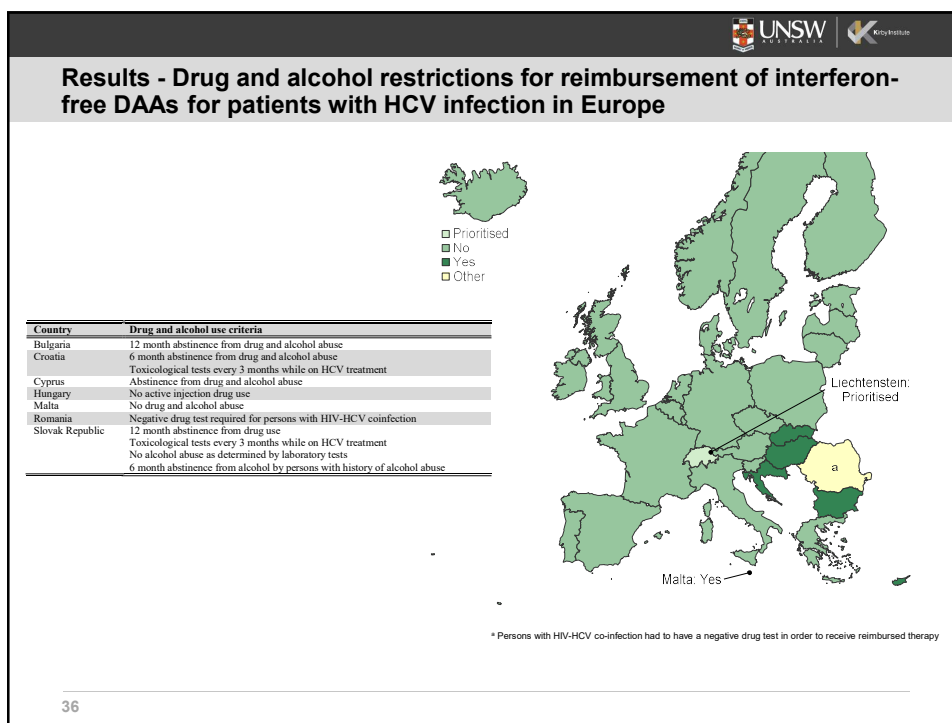
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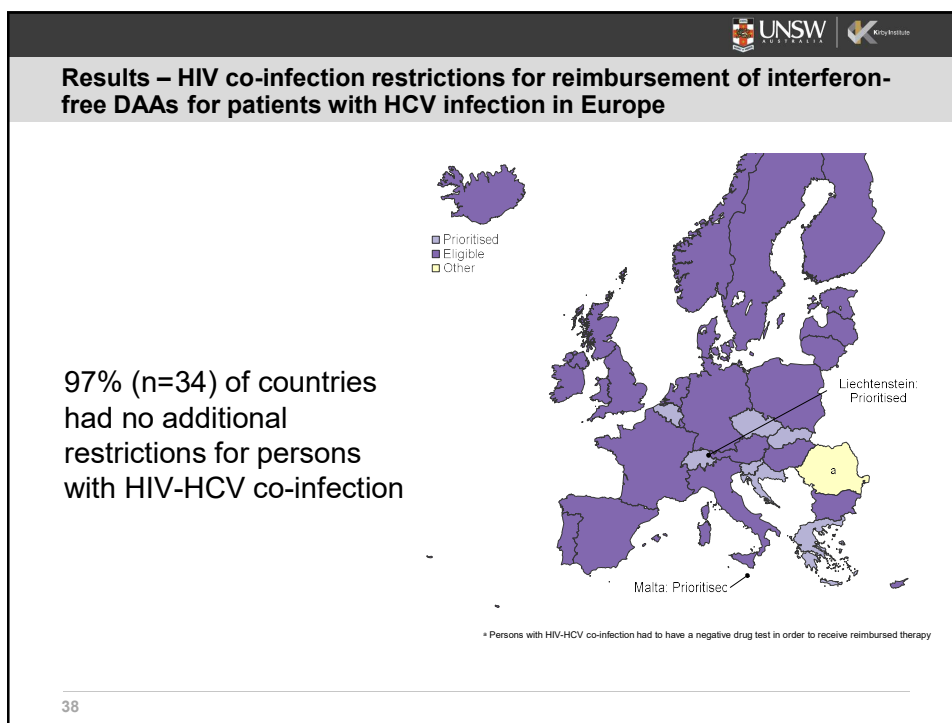
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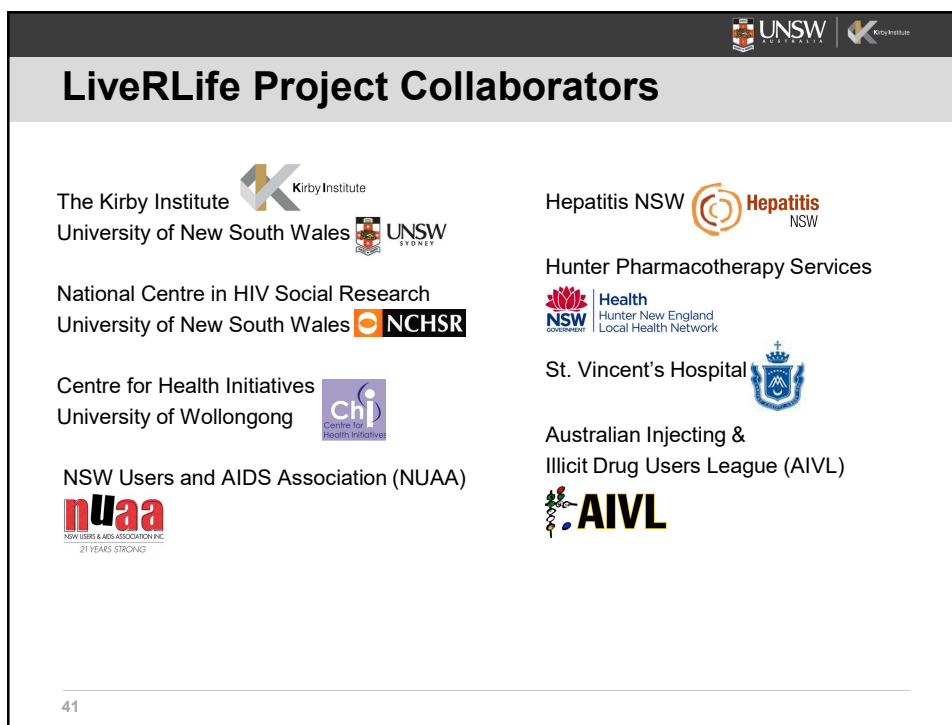
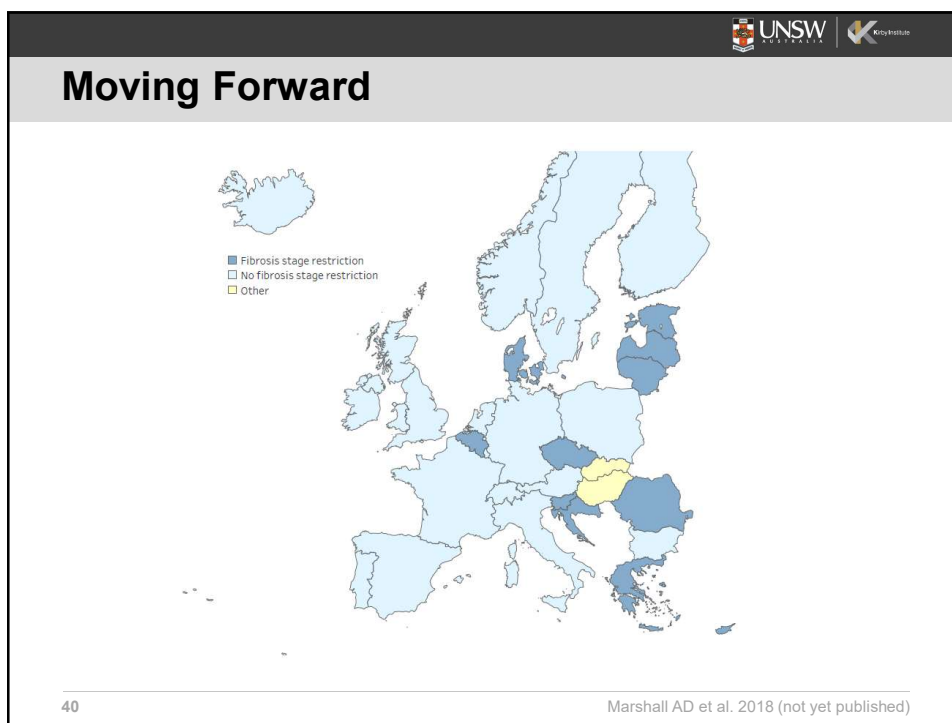




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Discussion

- Findings highlighted some variability in DAA therapy restrictions across Europe, particularly with respect to fibrosis stage
- Restricting DAA prescribing to specialists is a considerable barrier to broad access
- Evidence of some countries not following the European HCV treatment guidelines by EASL
- DAA era: Review countries beyond EU; re-treatment policies; variability within countries; implementation

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LiveRLife Funding




Student Scholarships







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