Financial incentives to increase hepatitis C testing and treatment uptake and adherence among people at risk of or diagnosed with hepatitis C: a systematic review

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Background

In 2016, WHO set HCV elimination goals to reduce HCV incidence by 80% and HCV-related mortality by 65% by 2030[1].

- Current hepatitis C testing and treatment uptake levels in Australia is insufficient to achieve elimination goals[2]

Financial incentives is one approach to improve progression through the HCV health care cascade

- Has worked to improve progression in the HIV treatment cascade[3]
- Incentives work to provide extrinsic motivation to change a person's behaviour using monetary rewards[4]

A systematic review was undertaken to review current evidence on incentives on testing uptake, treatment initiation and other outcome measures

Methods

A systematic search was conducted on August 2021 using Medline, PubMed and EMBASE using Ovid.

Search terms were:

- Hepatitis C (HCV, hepatitis C virus);
- Financial incentives (payment, subsidisation, rebate);
- Outcome terms (adherence, uptake, testing, treatment)

Studies limited to English language and date of publication to 2013 onwards to coincide with release of direct-acting antivirals

- Studies which do not report data and or on transplant recipients, blood banks or donations were excluded

Data extracted were: study characteristics, study conduct, participant characteristics and behaviours, intervention information and outcome measures

Results

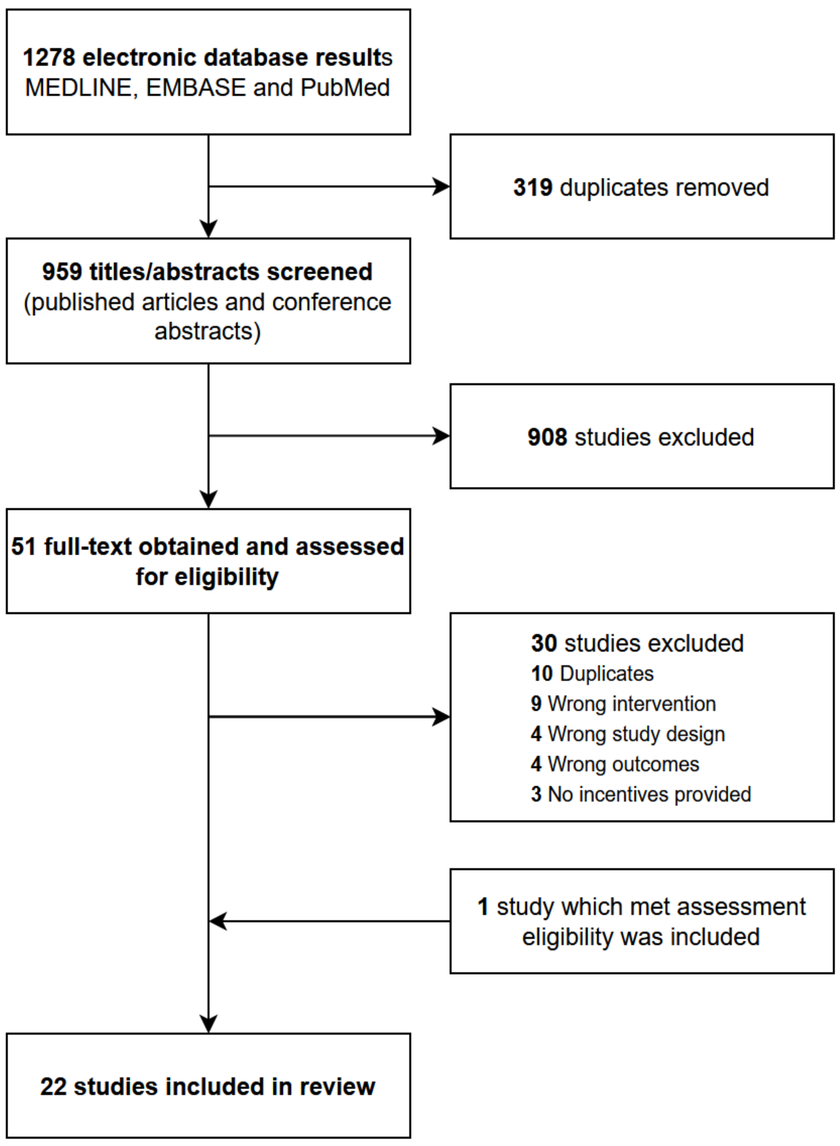

Figure 1. Schematic diagram of search results and screening process

Table 1. Participant demographics in included studies

Participant demographics	Number of studies
People who use drugs	11
General population at risk or affected by HCV	7
People experiencing homelessness	7
People in custodial settings	3

Table 2. Study design of included studies

Study design	Number of studies
Observational single-arm intervention	13
Comparative studies with pre/post intervention comparisons	4
Randomised control trials (RCTs)	3
Non-randomised comparative observational studies	2

Table 3. Outcomes in included studies

Outcome measured	Number of studies
Linkage or retainment in care	13
Testing uptake	12
Treatment initiation	11
Achievement of sustained virological response (SVR)	8
Treatment completion	4
Treatment adherence	3

Table 4. Types of incentives used in included studies

Types of intervention	Number of studies
Cash	9
Gift card	6
Voucher (shopping, grocery, food)	6
Bus passes	1

Key results

Nine comparative studies (40-1059 participants): 6 among people at risk or affected by HCV and 3 among people who use drugs.

Two offered cash incentives (up to $220-$600), two offered shopping vouchers (£20 or up to $110) and two offered gift cards (up to $45 or $50). Incentives promoted:

- 37% (n=316/840) to 98% (n=306/310) increase in proportion of participants taking up OraQuick Rapid Antibody test
- 10.6% (n=73/135) to 95% (n=54/57) increase in linkage or retainment in care such as clinic appointment attendance
- 75% (n=14/19) to 76% (n=41/55) increase in number of participants initiating treatment
- 70% (n=19/28) to 96.2% (n= 50/54) increase number of participants with a >90% medication adherence (treatment adherence)
- 86% (n=24/28) to 100% n=31/31) increase in number of participants completing treatment
- 69% (n=37/54) to 94% (n=82/87) increase in participants achieving SVR

Effect was statistically significant except for linkage or retainment in care, treatment initiation and SVR achievement in randomised controlled trials.

- Not significant when compared to no incentive (standard letter for liver assessment) or another intervention (phone calls, peer-mentor)

Majority of non-comparative studies found incentives promoted outcomes in a moderate to high level

- Comparative and non-comparative studies were all at moderate to high risk of bias

Discussion

- Offering incentives was found to promote moderately higher levels of outcomes measured across studies, but statistical significance of the effect of financial incentives were mixed between controlled trials and comparative studies
- Currently no controlled trial has been conducted to directly compare the effects of incentives against no incentives in outcomes other than clinic attendance
- Comparative and non-comparative studies and which found incentives to be effective also included other co-interventions with incentives (peer mentoring, counselling, food, merchandise or HCV educational sessions)
- No study gave out incentives larger than $100 on one outcome or investigated the effect of financial incentives among men who have sex with men

References: [1]World Health Organization [WHO]. Hepatitis C 2021 [cited 2022 4 May]. Available from: https://www.who.int/news-room/fact-sheets/detail/hepatitis-c.; [2] Scott N, Sacks-Davis R, Wade AJ, Stoove M, Pedrana A, Doyle JS, et al. Australia needs to increase testing to achieve hepatitis C elimination. Medical Journal of Australia. 2020;212(8):365-70.[3]Bassett IV, Wilson D, Taaffe J, Freedberg KA. Financial incentives to improve progression through the HIV treatment cascade. Curr Opin HIV AIDS. 2015;10(6):451-63; [4]Loewenstein G, Brennan T, Volpp KG. Asymmetric Paternalism to Improve Health Behaviors. JAMA. 2007;298(20):2415-7.

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