

## INTRODUCTION

- The WHO has issued its strategy to eliminate viral hepatitis as a major public health threat by 2030.<sup>1</sup> Elimination of HCV has become a feasible prospect with the availability of highly effective, well-tolerated direct acting antivirals (DAAs).<sup>2</sup> According to recent modelling data, even 80% of high-income countries are not on track to achieve the WHO goal.<sup>2</sup>
- 71 million people live with Hepatitis C (HCV) worldwide.<sup>3</sup> HCV excessively affects incarcerated individuals. They are 9-13 times more likely to be HCV infected than the general population.<sup>3</sup> With the 12- or 24-week DAA regimes, cure can be achieved within the average length of imprisonment (8.5 months globally).<sup>5</sup>
- People living in detention (PLD) often serve multiple, short-term sentences and spend most of their lives in the community. Therefore, prison-related interventions will not only deliver benefits to the individual but are likely to create a **community dividend**, that is, benefit for general population health.<sup>6</sup>
- Micro-elimination in prisons by universal screening and treatment aims to achieve a high cure rate and reduce the burden of HCV within the targeted population. It will help achieve equity in prison health, impact on community-level health disparities, and most likely create benefit for general population health.

## METHODS

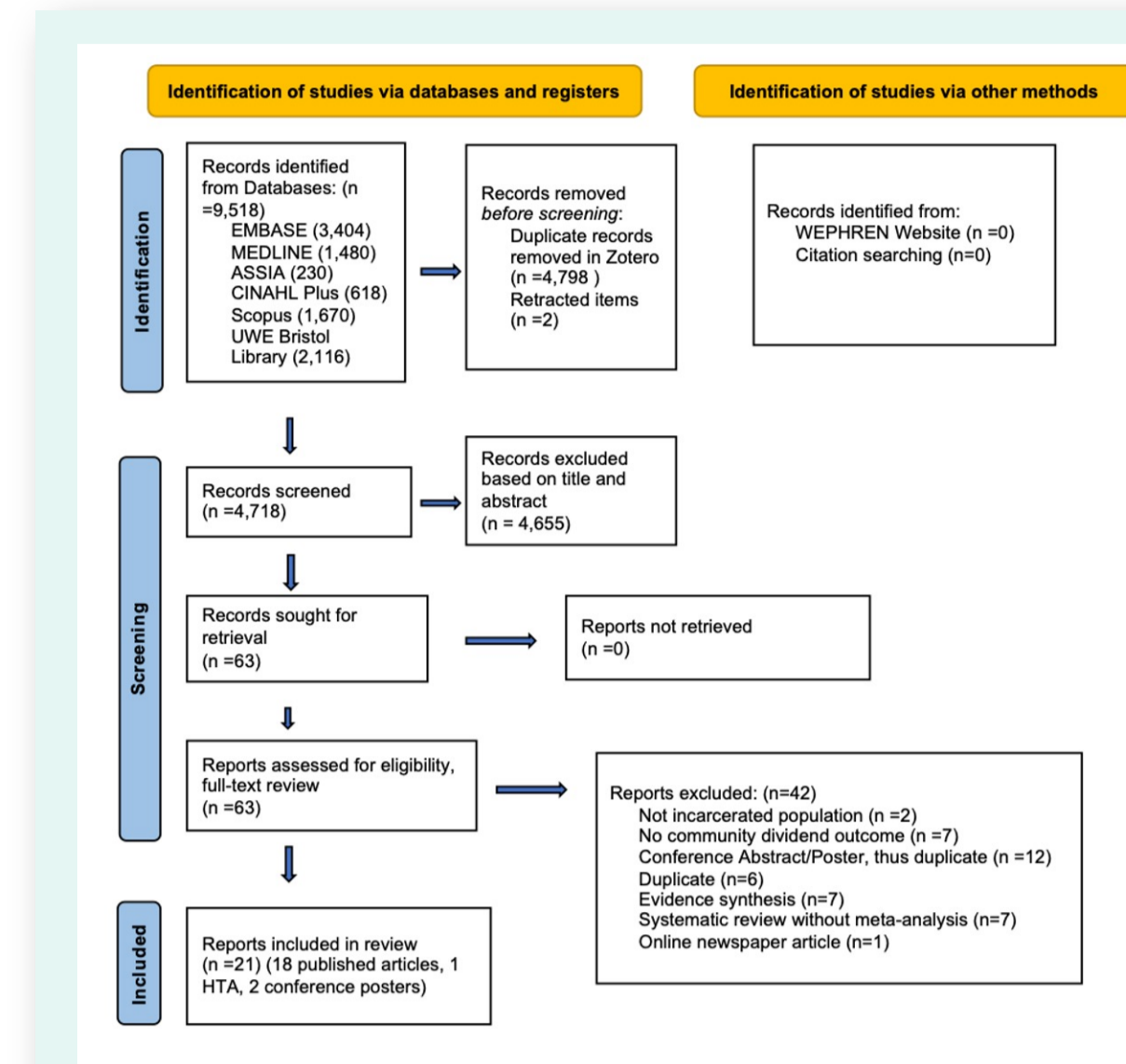


Figure 1: PRISMA ScR flow diagram

A scoping review was conducted to map out sources, types, characteristics of evidence that substantiates the existence of a community dividend and to identify key outcomes that make up the community dividend.

Joanna Briggs Institute methodology guidance was used. Literature search was done in EMBASE, Scopus, ASSIA, UWE library, CINAHL Plus, and Medline to find studies published in any country, any language between 1991 and June 2022. PRISMA ScR flow chart mapped out the number of

records identified, included, and reasons for exclusion. Data were extracted and charted in Excel using the following headings: title, year, country, study type, methodology, aim(s), description of intervention, outcome measures, key findings, and domain of community dividend.

The findings were systematically reported by charting table headings then synthesised in the discussion. Quality Assessment was carried out to help draw well-founded dependable conclusions and not as part of the screening for inclusion.

## RESULTS

- Although scoping reviews include a wide range of sources, exclusively economic studies and epidemiological modelling studies could be identified (Figure 4). Most sources were from the UK and US and a few other high-income countries (Figure 4) - low- and middle-income countries (LMICs) were not represented. The interventions discussed in these studies could be grouped into four distinctive types according to their coverage of the HCV care cascade (Figure 3)
- The synthesis of the evidence from the 21 included sources revealed economic, clinical and epidemiological domains to the community dividend. 20 outcomes were identified across the studies and were grouped into these three domains depending on where the impact of the intervention was felt. The green cells on the grid (Figure 2) show where a positive outcome was demonstrated, the red cell where the community dividend of the outcome was refuted.

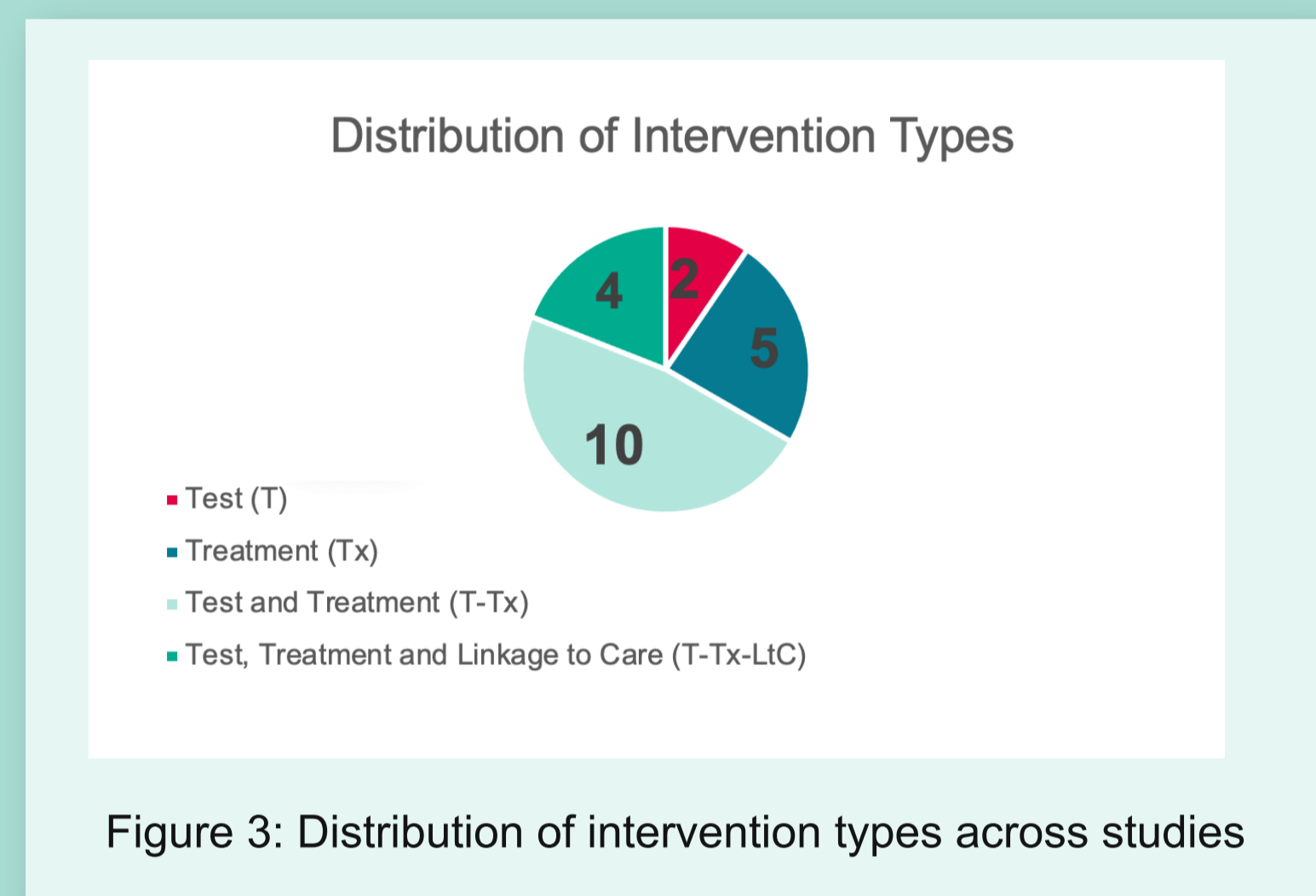


Figure 3: Distribution of intervention types across studies

Domains	Community Dividend Related Outcomes	Study Number																				
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Economic	Cost-effectiveness - ICER (Cost per chronic HCV (CHC) detected)																					
	Cost of screening per HCV positive person linked to treatment																					
	Cost-effectiveness - ICER (Cost per QALY)																					
	Cost-effectiveness - ICER (Cost per SVR achieved)																					
	Reduction in HCV disease cost																					
	Cost of treatment initiation																					
Clinical	Net Monetary Benefit																					
	Budgetary Impact																					
	Reduction in fibrosis (cirrhosis)																					
	Reduction in lifetime cumulative prevalence of LC																					
	Reduction in DC and HCC																					
	Reduction in cases of DC, HCC, LT																					
Epidemiological	Reduction in HCV related deaths																					
	Increase in proportion of lifetime SVR																					
	QALYs gained																					
	Reduction in prevalence																					
	Reduction in incidence																					
	Prevention of cumulative % new first chronic infections																					

Figure 2: Community dividend outcomes across studies

Characteristics of Included Studies (21)			
Year of Publication	Count	Study Design	Count
1991-2013	5	Cost-Effectiveness Analysis Modelling Study	10
2014-2022	13	Cost-Effectiveness Analysis and Budgetary Impact Modelling Study	3
Country	Count	Cost-Effectiveness Analysis	2
United Kingdom	8	Epidemiological Modelling Study	2
United States of America	4	Costing Analysis	1
Spain	3	Health Technology Assessment	1
Australia	2	Poster on Cost-Effectiveness Analysis	1
Taiwan	1	Poster on Cost-Effectiveness Analysis Modelling Study	1
Canada	1		
Switzerland	1		
Ireland	1		

Figure 4: Characteristics of included studies

## DISCUSSION

- The results suggest that the community dividend of testing for HCV in places of detention and treating chronic hepatitis C infected incarcerated individuals comprise three major domains: economic, clinical, and epidemiological.
- It is a cost-effective public health strategy and increasingly so with the recent availability of DAAs. Case-finding and treatment is a good investment of taxpayers' money and results in savings in long-term health expenditure.
- The cost is amply compensated by individual and collective benefits. It reduces the incidences of HCV-related liver complications, increases survival, improves quality of life for both the prison population and the general population and reduces infection transmission.
- Most of the benefits are realised in the community following release.

## CONCLUSIONS

- Investment in research and elimination programmes in LMICs through political commitment and domestic and international financing is a clear priority going forward.<sup>7</sup>
- Universal case finding and treatment for HCV should be implemented in all prisons if we are to achieve the elimination goals. Our findings show that case-finding in populations with higher prevalence such as incarcerated populations is always more cost-effective.
- The key drivers of achieving better outcomes for micro-elimination of HCV in prisons and thus greater impact on global elimination of hepatitis are the following:
  - Lower drug prices, increasing intensity of treatment rate, ideally by unrestricted access to DAA therapies irrespective of stage of disease or degree of fibrosis, and sentence length;
  - ensuring retention along all parts of the cascade of care;
  - treatment impact is more effective when accompanied by other interventions (such as targeting stigma reduction, disease awareness, increasing intervention uptake, reducing risk-taking behaviors) as well as community-based testing and treatment scale-up; investment in all these should leverage their synergistic impact.

## REFERENCES

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