MICRO-ELIMINATION IN CAIRNS BY 2030: A MODELLING STUDY TO DEMONSTRATE THE IMPACT OF CAIRNS HEP C FREE PROGRAM

Authors:
Maynard K[1], Houdroge F[1], Pedrana A[1,2], Barrett C[3], Gorton C[3], Bryant M[1], Franet S[1], Kemp R[5], Lewis R[3], Rodriquez M[3], Roe M[1], Selvey L[4], Smirnov A[4], Hellard M[1,2], Wade A[1], Russell D[3,], Scott N[1,2]

[1]Disease Elimination, Burnet Institute, [2]Department of Epidemiology & Prevention Medicine, Monash University, Melbourne, [3]Cairns Sexual Health Service, Cairns & Hinterland Hospital & Health Service, Cairns, [4]School of Public Health, The University of Queensland, [5]Communicable Diseases Branch, Queensland Health, Brisbane, Australia

Background:
Cairns and Hinterland in Queensland, Australia, has a population of approximately 257,000 and is aiming to achieve the World Health Organization hepatitis C (HCV) elimination targets by 2030. This study uses mathematical modelling to assess the current state of HCV in Cairns, project the progress towards elimination in 2030 and identify any additional priority interventions.

Methods:
A dynamic, compartmental model was calibrated to local clinical and surveillance data. The model disaggregated by key populations groups (Aboriginal and Torres Strait Islander people, people who inject drugs, prisoners and the general population) and contained a set of 30 care cascade interventions. Scenarios projected to 2030 included: a status-quo (continued current trends); and scenarios with an additional $10,000-$50,000 per annum optimally allocated across interventions to minimise the number of people living with HCV (PLHCV) in 2030.

Results:
Programs currently being implemented in Cairns are proving effective at reducing the number of PLHCV and projection of current trends indicated an 83% reduction in PLHCV from 2015 to 2030. An additional investment of $10,000 or $50,000/yr could improve this to a 90% or 93% reduction in PLHCV by 2030 respectively, with optimization identifying a part-time integrated HCV nurse as the priority intervention. This intervention benefits multiple population groups, and can help to identify remaining PLHCV who may no longer be part of identified risk groups (e.g. people with a history of injecting drug use). Other priority interventions focus on engaging Aboriginal and Torres Strait Islander peoples and include incentives and outreach campaigns.

Conclusion:
Modelling suggests that Cairns is on track to surpass an 80% reduction in PLHCV by 2030. Additional investment could enable Cairns to reach elimination targets by 2025.

Disclosure of Interest Statement:
Funding for this work was through an investigator-initiated grant from Gilead Sciences. AP and MH have received investigator-initiated grants from Gilead Sciences and AbbVie.