

Micro-elimination in Cairns by 2030:

A modelling study to demonstrate the impact of Cairns Hep C Free program.

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INTRODUCTION and AIMS

Cairns and Hinterland in Far North 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:

1. Assess the impact to date of Cairns Hepatitis C elimination program versus expected state if direct-acting antivirals (DAAs) had not been introduced
2. Project the progress towards the elimination target of an 80% reduction in people living with HCV (PLHCV) by 2030
3. Identify additional priority interventions to accelerate progress towards elimination

SCENARIOS

Scenario 1: Continued current trends. Evaluates the progress towards elimination if current trends are continued.

Scenario 2: Counterfactual. Estimates the number of PLHCV if testing and treatment had not been scaled up with the arrival of DAAs in 2016.

Scenario 3: Optimisation scenario. Projects PLHCV in 2030 under optimised intervention strategies.

(Care cascade interventions considered include: GP education, integrated HCV nurse, outreach campaigns, incentives, peer navigators, community prescribers, key population services, point-of-care testing, contact tracing and telehealth - for different key populations)

RESULTS - Optimisation scenario

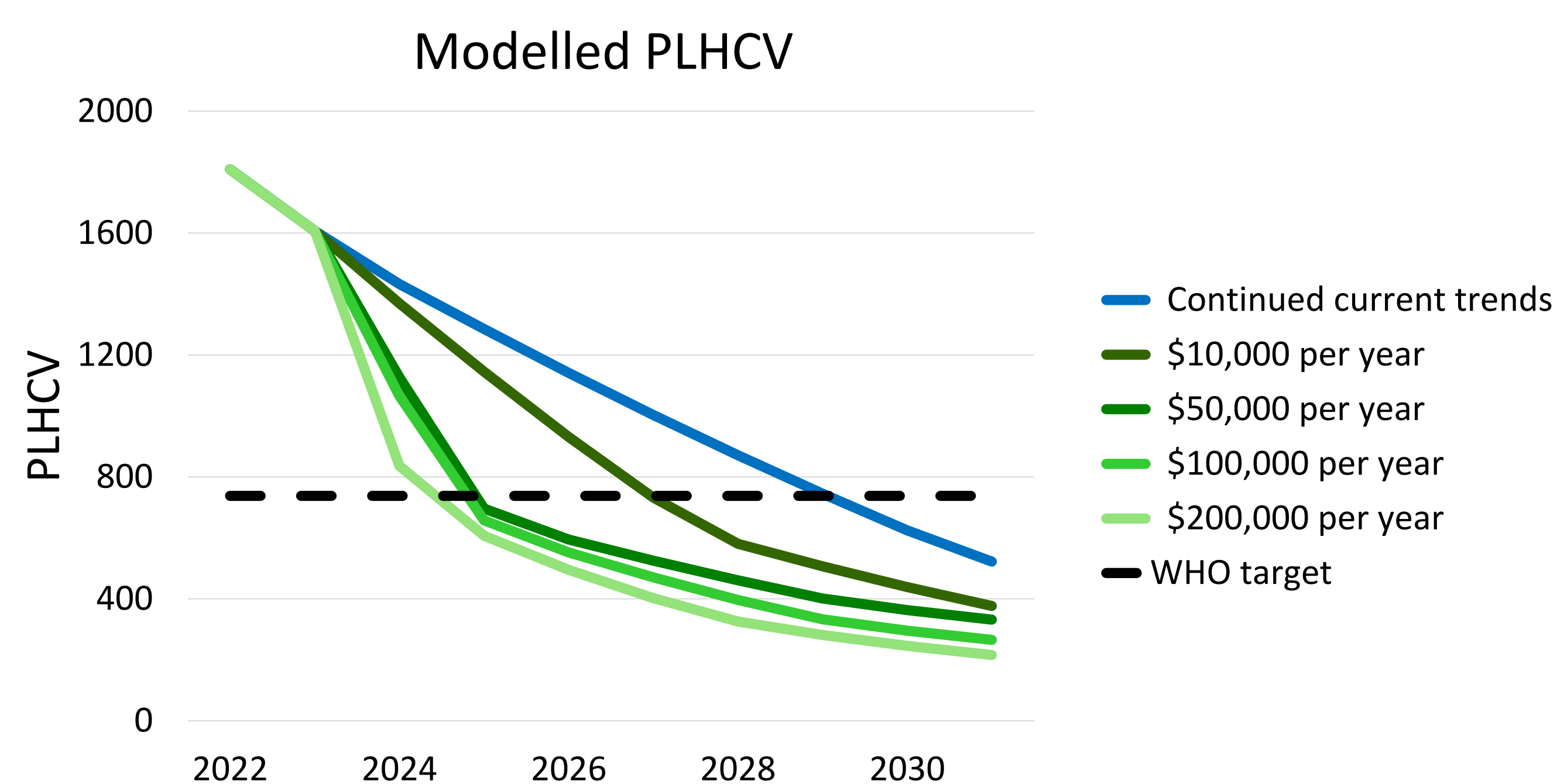


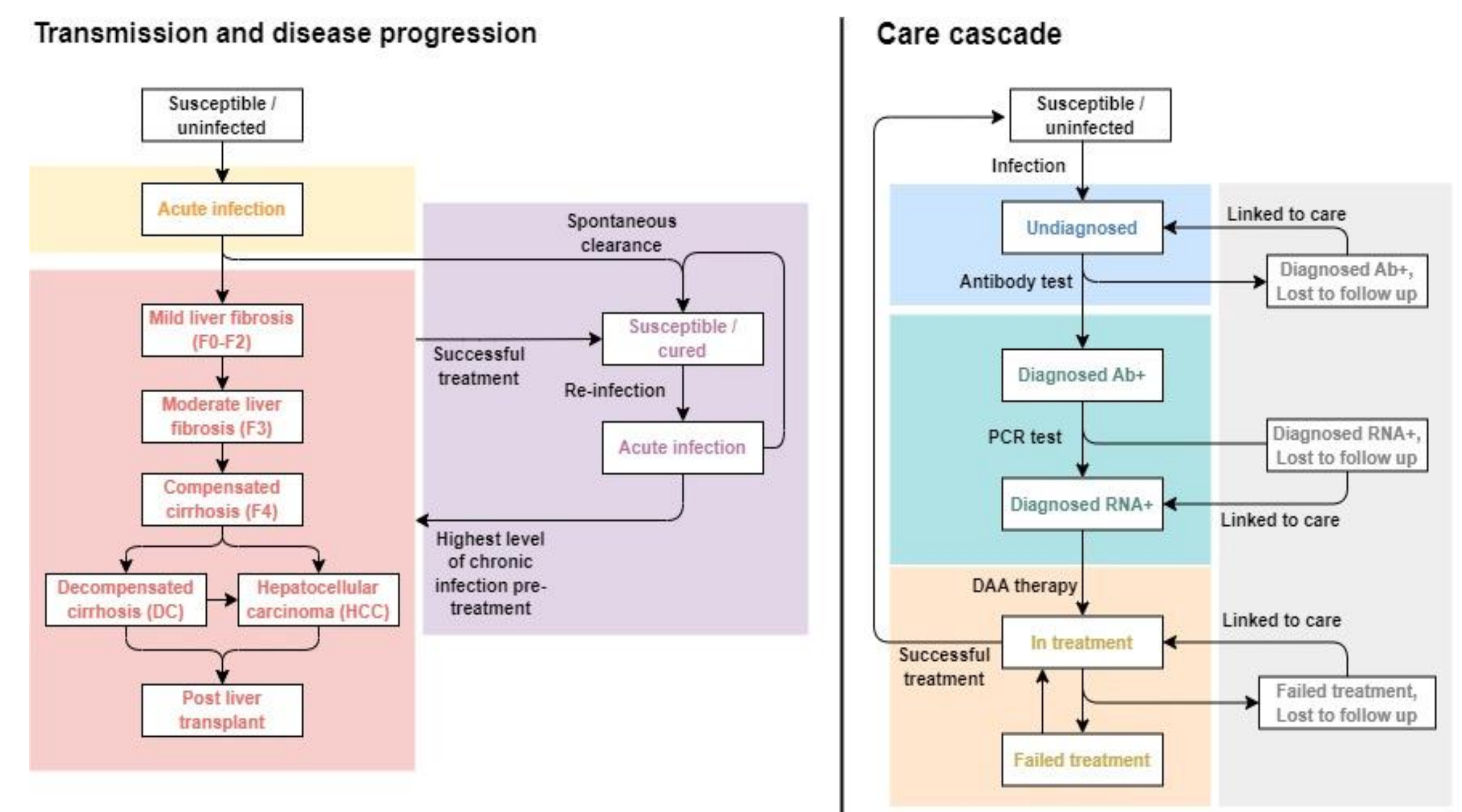
Figure 2: Optimised investment schemes.

Priority interventions include:

- Integrated HCV nurse
- Outreach campaigns for Aboriginal and Torres Strait Islander peoples
- Incentives to Aboriginal and Torres Strait Islander peoples
- Outreach campaigns for People who inject drugs

METHODS

A dynamic compartmental model of HCV disease transmission and progression, and the care cascade.



The model structure is replicated for key populations groups: people who inject drugs, prisoners, Aboriginal and Torres Strait Islander peoples and the remaining general population.

RESULTS - Continued current trends

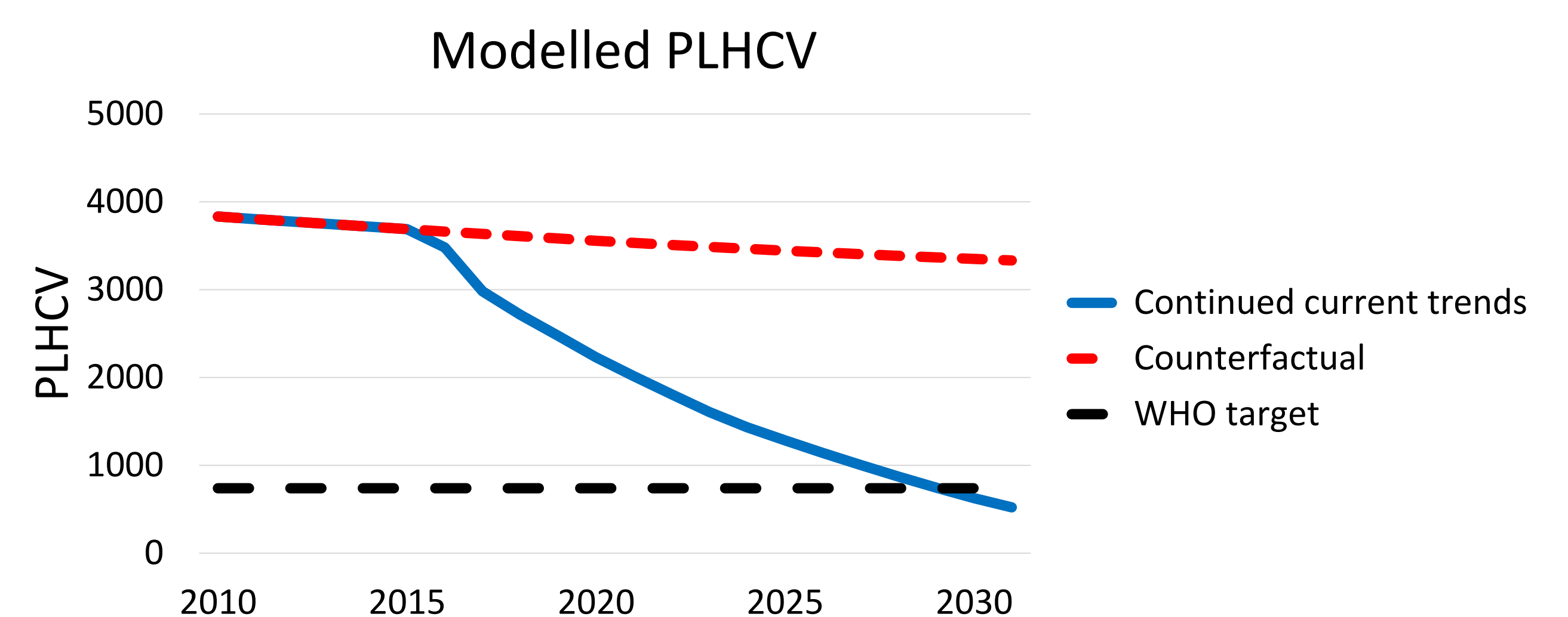


Figure 1: Continued current trends and counterfactual

LIMITATIONS

- The model projects the benefit of additional investment and does not consider the cost of existing interventions.
- The 2019 outbreak in a Cairns correctional facility was not included in the model. As regions approach elimination, responses to post-micro-elimination outbreaks will become an important consideration. As such the 2019 outbreak warrants its own analysis.

CONCLUSION

Cairns is likely on track for elimination by 2030

- Estimated 1,607 PLHCV remaining in 2023 (56% reduction) vs 3,487 PLHCV remaining without the introduction of DAAs
- 83% reduction in PLHCV projected to be reached by 2030.
- \$50,000 of additional investment per annum could enable target to be met by 2025, with a 90% reduction in PLHCV by 2030.
- Priority intervention is an integrated HCV nurse to provide support where needed.