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Advancing elimination targets for viral hepatitis and HIV in Poland: estimating the cost-effectiveness of emergency department opt-out testing for blood-borne viruses

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The potential clinical and health economic impact for Poland

✓ More diagnosed

✓ More treated

✓ Cost – effective

Summary

- Our model suggests **combined BBV OOT in EDs** could **identify more infections**, **improve health outcomes,** and, within a range of assumptions, be **cost-effective** in high-prevalence settings in Poland.
- **Successful LTC** post-diagnosis is a **primary driver** of long-term cost-effectiveness.

Contact information

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Introduction

- In Poland, diagnosis rates for viral hepatitis (HBV and HCV) and HIV fall below global elimination goals[1-3].
- Forced migration into Poland from Ukraine since 2022 has rapidly increased the number of people living with blood-borne viruses (BBV) [4-6].
- ECDC guidance advocates for integrated testing of BBVs[7]; however, currently, there is no systematic screening in general medical settings apart from antenatal care.
- Gaps in linkage to care (LTC) and HCV non-reflex testing approach in Poland contribute to delayed diagnosis and suboptimal patient outcomes[8].
- Emergency departments (EDs) are a primary healthcare access point for vulnerable populations. Recent European studies have demonstrated effectiveness and suggest cost-effectiveness of ED BBV opt-out testing (OOT) in high-prevalence settings[9-11].

➢ **Objective:** We aimed to assess the potential short- and long-term impacts of best-practice ED BBV OOT compared with no systematic ED testing as standard of care (SoC) in Poland.

Method

Model

- Simulated short-term outcomes were assessed through a decision tree, and long-term outcomes through a lifetime Markov model[12].
- The model was adapted to the Polish setting using Poland-specific data.

Perspective

- National Health Insurance provider perspective over a lifetime.

Outcomes

- Number of new diagnoses.
- Number linked to care.
- Quality-adjusted life years (QALYs)*.
- Costs*.

Key assumptions:

- Current ED testing rate (SoC): 0%, assumed; Opt-out programme uptake rate: 99%[13].
- HIV and HCV diagnoses use reflex testing.
- Other key model inputs and assumptions are provided in **Table 1**.

Table 1 Key data inputs†

	HIV	HBV	HCV
Prevalence (in high-prevalence EDs)	0.4%[14-16]	0.9%[14,17-19]	0.4%[19-20]
Percentage of diagnoses that are new diagnoses	72%[16]	86%[21]	80%[21]
Percentage of diagnoses LTC	63%[22]	80%[19]	37%[19]

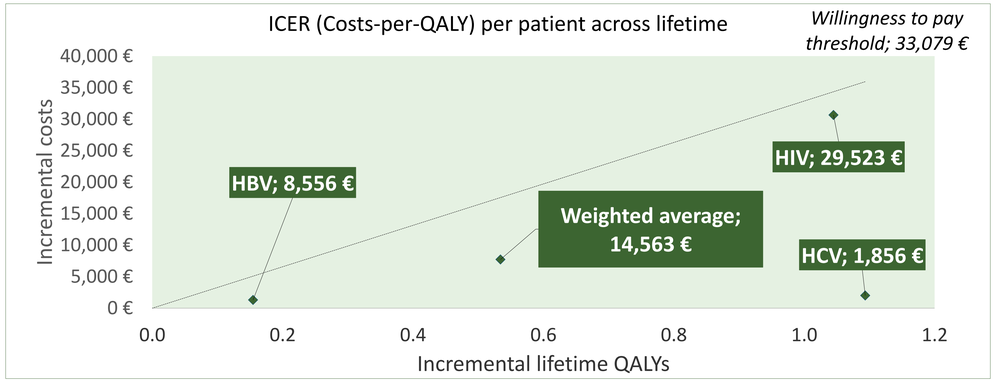
†HIV confirmatory/HBsAg/HCV RNA; *Discounted at 5% per annum

Results

- For **10,000** people having blood tests, ED BBV OOT resulted in an incremental **128** new diagnoses and **95** LTC (linked or re-linked to care) (**Figure 1**).
- Combined ED BBV OOT was **cost-effective** (**Figure 2**) over a lifetime, with a cost per QALY gained of 14,563 €, below the willingness-to-pay threshold (33,079 €)[23].
- **Scenario analyse**s confirm cost-effectiveness even when HIV and HCV prevalences were reduced to 0.1%.
- **Successful LTC** post-diagnosis was a **primary driver** of long-term cost-effectiveness.

Figure 1: Short-term results

Figure 2: Long-term results



Conclusions: Best-practice model ED BBV OOT

- **Improves case detection and LTC**, compared to SoC, across all BBVs.
- Is **cost-effective** in high-prevalence settings in Poland.
- Our model **underestimates** the true benefits and costs avoided from **transmissions averted (U=U)**.
- **Maximising impact requires effective LTC,** and **reflex testing**, in line with EASL guidelines[24].

References

References can be accessed by scanning the QR code