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REFLEX TESTING IN PATIENTS WITH CHRONIC HEPATITIS C IN SPAIN IMPROVES HEALTHCARE OUTCOMES AND IS COST EFFECTIVE

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BACKGROUND

- To achieve the goal towards hepatitis C virus (HCV) elimination proposed by the World Health Organization (WHO)[1], interventions to improve testing, facilitate linkage and treatment are necessary.
- A diagnosis of active infection in the same serum sample would simplify the cascade of care and stablish rapid access for patients to treatment.

METHODS

POPULATION

- A total of 269,526 new request HCV antibody testing out of a total of 8.3 million people2 (population of Andalusia), was estimated from a Panel of Expert in Microbiology and Gastroenterology, which are carried out during one year (67% outpatient and 33% inpatient care).

CASCADE OF CARE FLOWCHART FOR HEPATITIS C VIRUS (Figure 1 and Figure 2)

- In both scenarios, one-step diagnosis and standard diagnosis:
  - A decision tree model was developed to estimate the impact on detection, referral to specialists, loss of follow-up and access to treatment comparing one-step diagnosis versus standard diagnosis, in which HCV viremia is not investigated in the first visit.
  - Diagnosis was based on HCV antibody testing, HCV-RNA (viral load) and genotyping.
  - Patient follow-up included: initial visit, diagnosis testing, referral or not to specialists and, where appropriate, treatment.
- In one-step diagnosis, a positive test was confirmed in the same blood sample, in the same microbiology laboratory.
- In standard diagnosis also was considered:
  - In inpatients, referal to the specialty center was included (in 31%), before they were refered to the hospital. These patients also had an additional visit (in 15%) for the collection of test results before being refered to specialist.
  - A second HCV antibody testing in 10% of patients.
- Patients who did not return to medical visit were considered loss of follow-up. In the non-referral, only those patients wiht anti-HCV positive test not referred to the specialist for them assessment were considered.
- All data for the model were obtained from literature or, if not available, from an Expert Panel.

COSTS

- The unit costs (€, 2018) of the health resources were obtained from databases of the Andalusian Health Service. The pharmacological cost was not considered.

Figure 1. Cascade of care flowchart for hepatitis C virus for one-step diagnosis

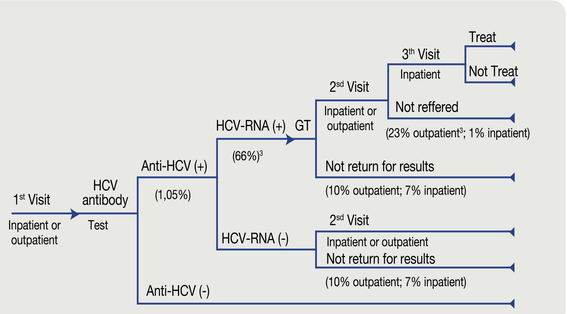
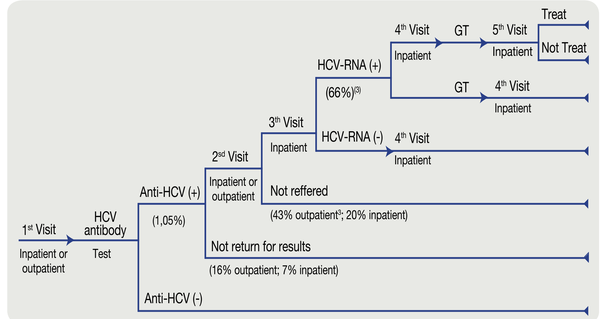


Figure 2. Cascade of care flowchart for hepatitis C virus for standard diagnosis



OBJECTIVE

To estimate the impact on healthcare outcomes of chronic HCV diagnosis based on a single blood sample (one-step diagnosis) in Andalucía, Spain (8.37 million people), from a National Health System perspective.

RESULTS

Figure 3. Population results (one-step vs. standard diagnosis)

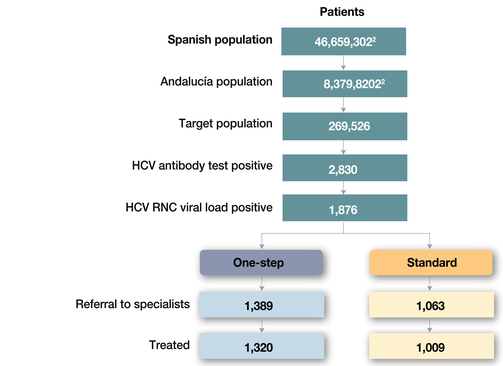


Table 1. Economic results

	One-step	Standard	Difference
Medical visits	€14,995,124	€15,252,927	- €257,803
Tests	€676,369	€603,495	€72,875
Total costs	€15,671,493	€15,856,421	- €184,928

- In the analysis, a total of 2,830 individuals of the tested population would be detected as positive for HCV antibody, of whom 1,876 would be HCV-RNA+ve. From this population, using one-step diagnosis, 1,389 chronic HCV patients were referred to specialised care (1,320 treated) and 1,063 patients (1,009 treated) with standard diagnosis (Figure 3).
- No HCV-RNA-ve patient were referred to specialist using one-step diagnosis versus 540 with standard diagnosis.
- Compared to one-step diagnosis, using standard diagnosis 63% more patients were not referred to specialists and 30% more patients were considered a lost to follow-up.
- When compared reflex testing to standard diagnosis, savings of €184,928 linked to one-step testing are obtained, and savings of €3,634 per patient with HCV-RNA+ referred to specialised care (Table 1).

CONCLUSION

- Reflex testing simplifies the HCV diagnosis procedure, enhancing linkage to care as more patients with chronic infection are identified and treated, making better use of healthcare outcomes, and contributing to achieve the WHO HCV elimination target.
- In addition, reflex testing would generate economic savings to the Health System.

References: 1. World Health Organization. Available in: http://www.who.int/hepatitis/es/ 2. Statistics National Institute. Available in: https://www.ine.es/ 3. Casas, et al. Congress GEHEP 2016.

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