

# AUTOMATION OF HEPATITIS C SCREENING IN THE HOSPITAL SETTING BASED ON EXTRAHEPATIC MANIFESTATIONS AND RISK PROFILE. PRELIMINARY RESULTS FROM THE HOSPITALS WITHOUT C PROGRAM (HOSPITALES SIN C)

Antonio García Herola<sup>1</sup>, Sonia Pascual<sup>2</sup>, Rubén Cuesta<sup>3</sup>, Carlos Mármol-Aguilar<sup>4</sup>, Ana Bejarano<sup>5</sup>, Antonio Díaz<sup>6</sup>, Marina Millán<sup>7</sup>, Marinela Méndez<sup>8</sup>, Raquel Domínguez-Hernández<sup>9</sup>

<sup>1</sup>Digestive Medicine Section, Hospital Marina Baixa de Villajoyosa (Alicante), Spain; <sup>2</sup>Hepatic Unit, Gastroenterology Service, General University Hospital of Alicante, Center for Biomedical Research in Liver and Digestive Diseases Network (CIBERehd) (Alicante), Spain; <sup>3</sup>Digestive Diseases Section, Service of Internal Medicine, Hospital de Sagunto (Valencia), Spain; <sup>4</sup>Service of Digestive Medicine, Hospital Sant Joan de Deu de Manresa (Barcelona), Spain; <sup>5</sup>Service of Digestive Medicine, Hospital Juan Ramón Jiménez (Huelva), Spain; <sup>6</sup>Digestive Diseases Section, Hospital Universitario del Sureste, Arganda del Rey (Madrid), Spain; <sup>7</sup>Digestive Service, Hospital Sierrallana, Torrelavega (Cantabria), Spain; <sup>8</sup>Medical Department, Gilead Sciences SLU., (Madrid), Spain; <sup>9</sup>Pharmacoeconomics & Outcomes Research Iberia (Porib), (Madrid)

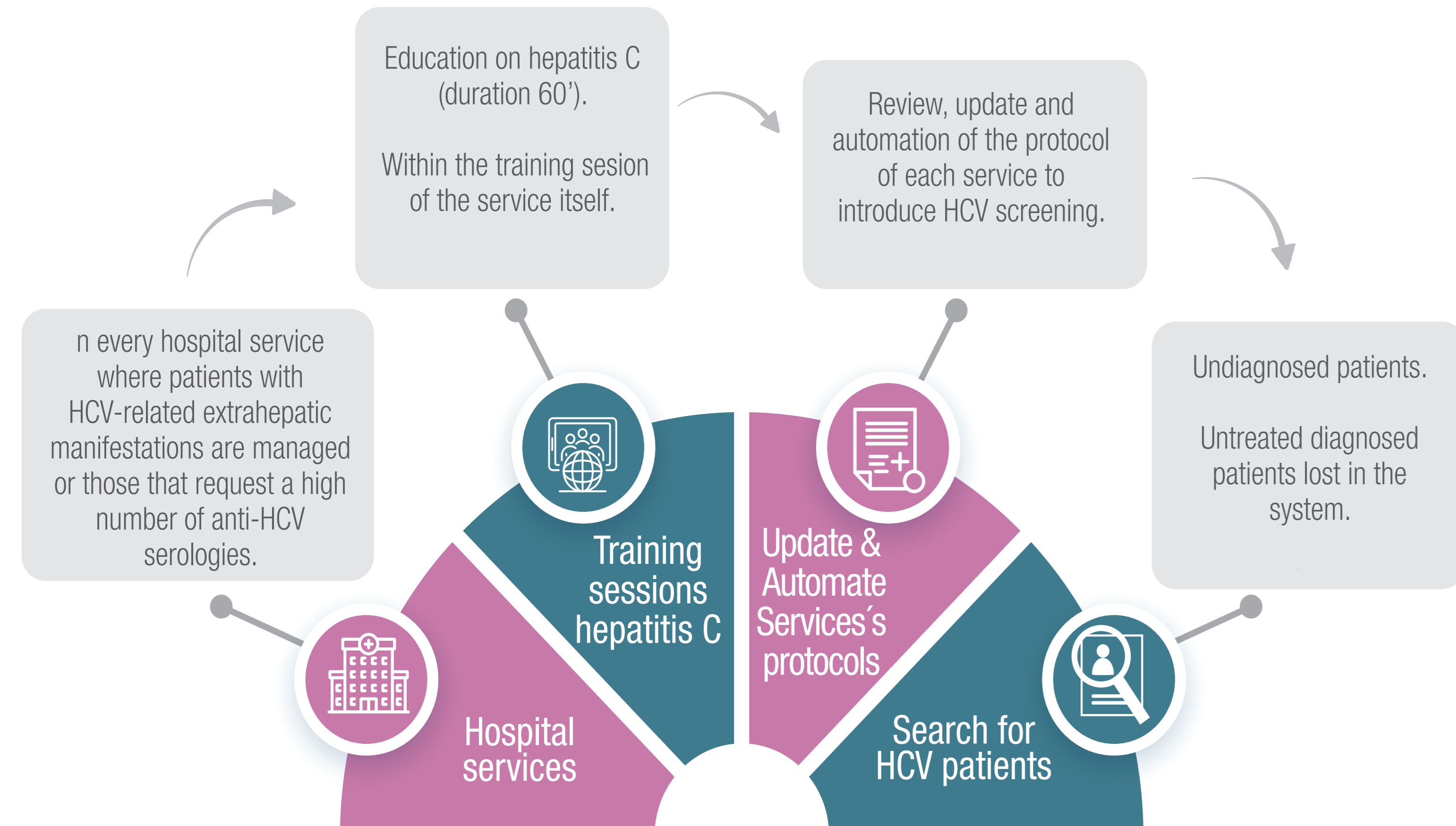
## Background

- Hepatitis C virus (HCV) infection is associated with risk factors and highly prevalent extrahepatic manifestations (EHM) [1-2].
- The identification of hospital services that treat these extrahepatic manifestations, together with training on the importance of HCV detection could help in the search for infected patients.

## Methods

- The Hospitals without C program consisted on training sessions to healthcare professionals to promote education on the relevance of hepatitis C diagnosis and patients session finding at different hospital services (Figure 1).
- The selection of services was carried out considering those managing patients with HCV-related EHM, with a high request of anti-HCV serologies.

Figure 1. Hospitals without C Program



- The services in which the sessions were held included Psychiatry, Emergency, Internal Medicine, Gynecology/Obstetrician, and Hematology, among others (Figure 2).
- The training sessions lasted approximately 60 minutes and were conducted by hepatologists, infectious diseases specialists, internal medicine specialists and microbiologists, within the service's own clinical sessions whenever possible.

Figure 2. Services with training sessions



- First, the protocols were updated, so upon detection of a patient with EHM associated to HCV in consultation, in case of requesting analysis, the specialist could manually request HCV serology analysis. Then, in some hospitals, the protocol was automated by establishing an automatic request in the ordered analytics.
- After the sessions, a follow-up was carried out every 6-12 months to collect information on:
  - The number of updated protocols to introduce HCV screening in each service and the referral of identified patients to the specialist in the management of hepatitis C.
  - The number of protocols automated.
  - The patient's identification and referral, including those newly diagnosed and those lost to follow-up i.e. diagnosed but untreated.
- Information was also collected on the hospitals that had implemented an alert for the notification of HCV-RNA-positive cases from Microbiology to the hepatitis C specialist.

## Conclusions

- Hospitals without C program has proven to be a key strategy for raising awareness of HCV infection among professionals in different hospital services managing patients with HCV-associated extrahepatic manifestations. Moreover, the program favors the setup, updating and automation of protocols to find HCV patients of new diagnose and alerts to avoid lost to follow-up patients in the Health System.
- The next step to meet the objectives of the project would be to update and automate protocols at all hospital services within the program.

## Aims

The objective of Hospitals without C program is to raise awareness of hepatitis C at different hospital services, implement of protocol for HCV screening, and achieve protocol automation in these settings.

## Results

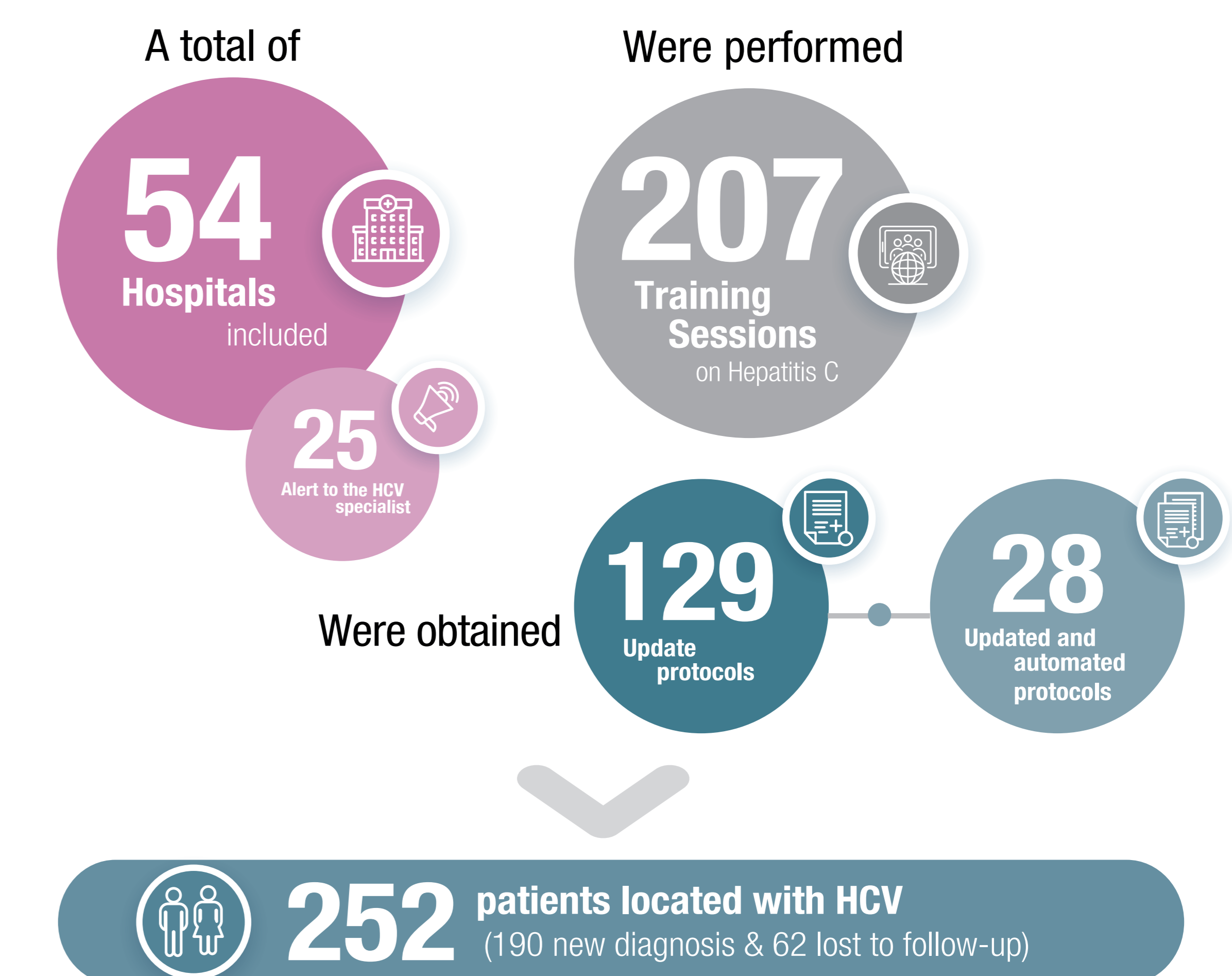
- 54 hospitals were included, with 207 training sessions conducted in different services; with an average of 3.8 sessions per hospital and a maximum value of 14 sessions. After the sessions, 129 services had an updated protocol and 28 services had both (updated and automated protocol). In addition, 252 HCV patients were identified and referred to the corresponding specialist for HCV care: 190 patients were of new diagnosis and 62 patients were lost to follow-up in the system (Figure 3).
- The services that referred the most patients were Psychiatry and Emergencies services (Table 1).

Table 1: Services with the highest number of referred patients

Hospital Services	Sessions by Services	Updated protocols by services	Patients referred by Service
Psychiatry/ Mental Health	18	17	66
Emergencies	26	18	45
Hematology	13	9	28
Gynecology	21	18	22
Internal Med.	17	8	25
Anesthesia / Surgery	16	15	13

- A total of 25 / 54 hospitals had implemented an HCV-RNA positive case notification alert from Microbiology to the hepatitis C specialist, allowing patient journey simplification by facilitating direct linkage to care for disease management, helping to avoid a loss to follow-up of diagnosed patients through the care cascade.

Figure 3. Results of Hospitals without C Program



## Referencias

1. Flores-Chávez A., Rev Esp Sanid Penit. 2017;19(3):87-97. doi: 10.4321/S1575-06202017000300004.
2. Mazzaro C., Viruses. 2021;13(11):2249. doi: 10.3390/v13112249.

## Acknowledgements

Special thanks for their collaboration in the implementation of the project to Dra. Marta Casado, Hospital Universitario Torrecárdenas (Almería) and to all the centers participating in the project at a national level.