

A NOVEL STRATEGY FOR THE DEVELOPMENT OF THE HELLENIC CORD BLOOD BANK (HCBB)

Catherine Stavropoulos-Giokas¹, Helen A. Papadaki², Alexandros Spyridonidis³, Theofanis Chatzistamatiou¹, Efstathios Michalopoulos¹, Amalia Dinou¹, Vassiliki Gkiokas⁴, Markos Sarris⁵, Andreas Papassavas¹

¹Hellenic Cord Blood Bank-Biomedical Research Foundation Of the Academy of Athens, Athens, Greece

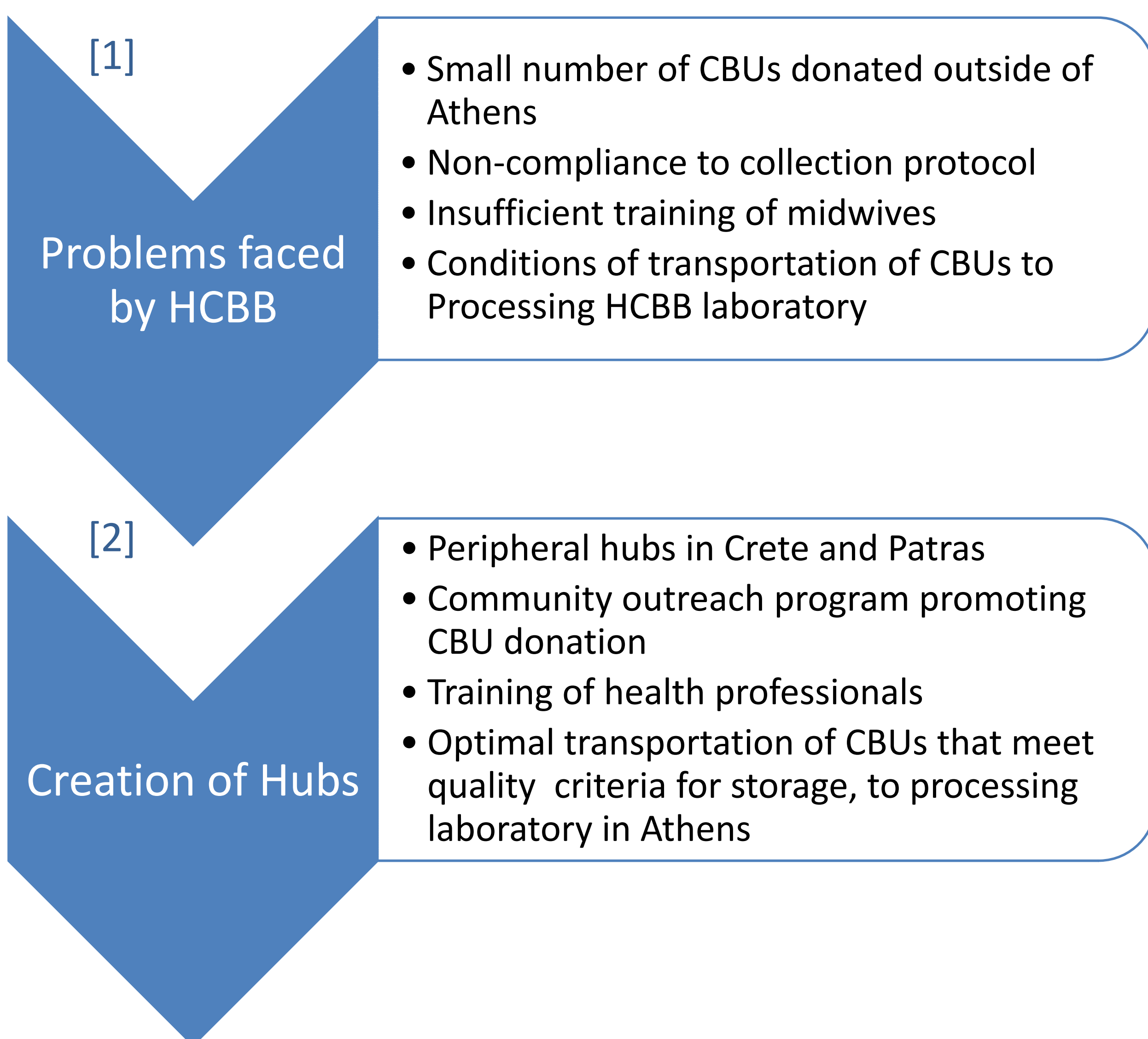
²University of Crete School of Medicine, Heraklion, Greece

³University Hospital of Patras, Patras, Greece

⁴Hellenic Transplant Organization, Athens, Greece

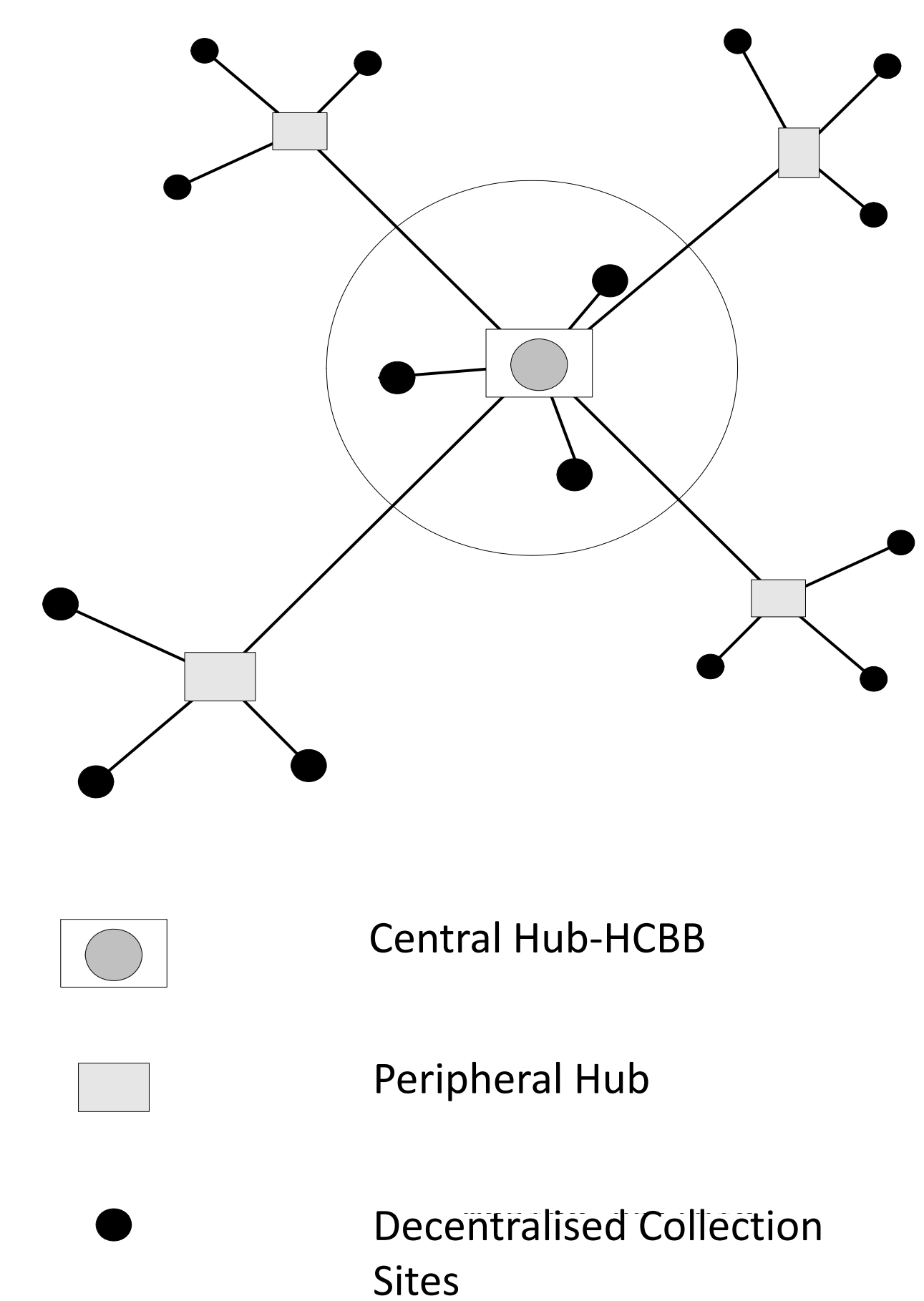
⁵Technological Educational Institute of Athens, Athens, Greece

The aim of establishing a Public (Unrelated) Cord Blood Bank (CBB), is to provide the population covered high quality CBUs, covering not only the most common HLA haplotypes but also rare ones, thus providing patients with a satisfactory probability of finding a suitable graft. In Greece, due to geographic reasons, a lot of the donated CBUs from islands or other isolated regions do not arrive in the condition required from the FACT/Netcord Standards as implemented by the Hellenic Cord Blood Bank (HCBB)[1].

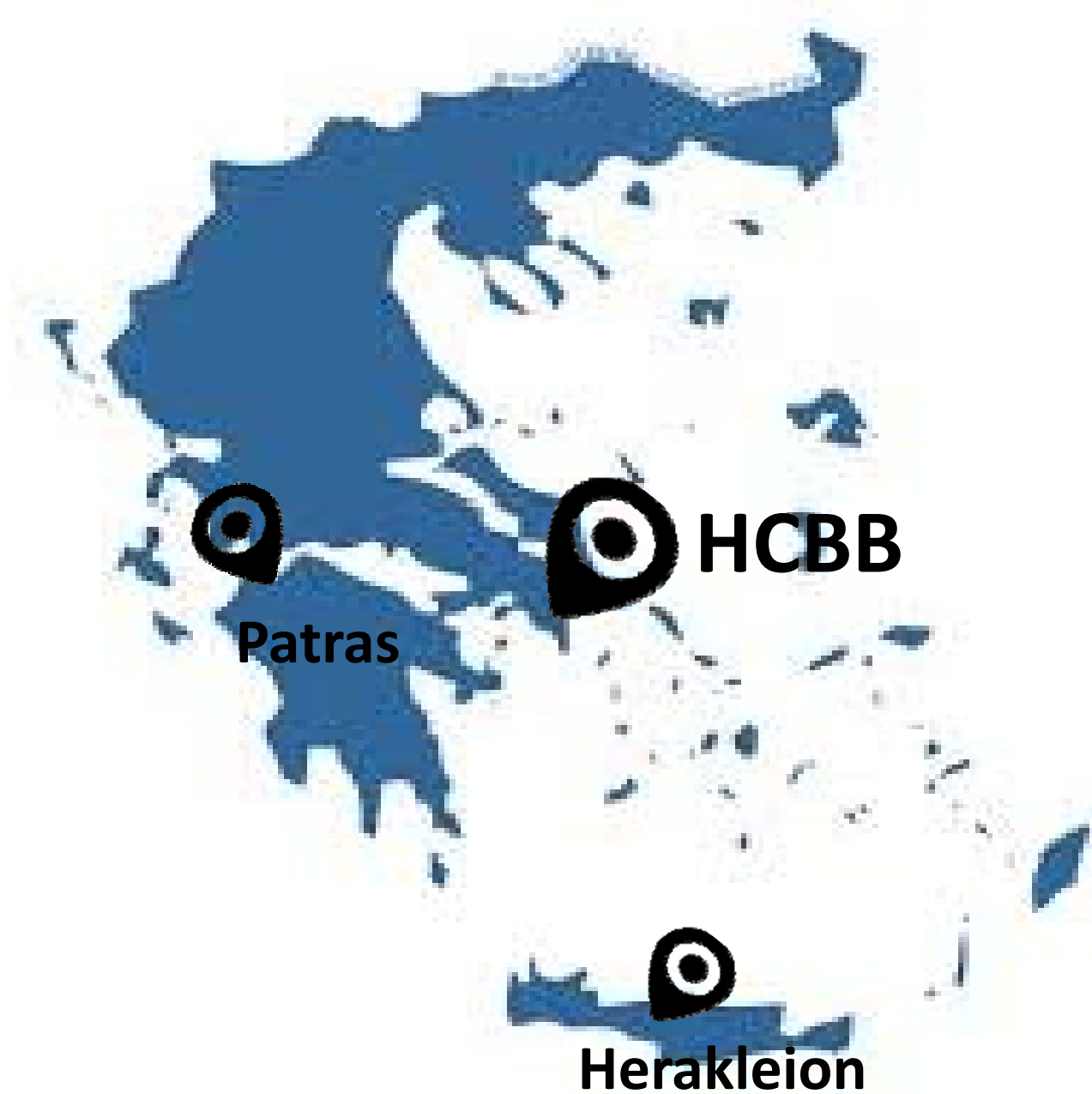


For this reason [1], a Business Plan, involving the creation of a CBU Collection Network with Peripheral Collection Hubs and Decentralised Collection sites was conceived[2].

The Spatial Model for this Plan (right) takes into account geographical criteria, availability of Health Services, population size, roads and access, transportation times and costs, and demographical criteria (birth rates etc) [2].



Based on this model, the HCBB has recently started the implementation of a decentralized system with the establishment of two “hubs” at the Hematology departments of the University Hospitals of Crete and Patras. The CBUs collected in Crete and Western Greece respectively, will be received and sorted at the Hubs’ facilities, and the units meeting the HCBB quality criteria will be shipped to the HCBB Processing Facility in Athens under optimal conditions. There, they will undergo processing, testing and will be stored, before getting listed.



How it works

- Hub personnel trained by HCBB staff (training for trainers).
- The informed consent for CBU donation is obtained at peripheral hubs
- CBU collection at decentralized collection sites
- CBU transported by parents to Hub: triage of CBUs meeting quality criteria
- Transportation under controlled conditions to HCBB HQ in Athens.

This strategy will in the long term, add to the inventory a number of high quality units (regarding TNC and CD34 counts, viability etc) but also enrich the inventory with unique haplotypes present in the populations of the regions covered by the hubs. The results of the hubs’ operation so far are promising, although any effect in haplotypic content will not be evident for some time.

This “hub” approach could be applied to a broader context, where neighboring countries with closely related populations as evidenced by HLA-based population studies, could develop a network of hubs where CBUs of different ethnic origins would be collected and redirected to a central facility. This would provide an alternative to the establishment of a CBB in every country as it would be financially more advantageous compared to the cost of creating and operating a fully accredited CBB. Such a network could be established between Balkan countries that do not have a public CBB covering their respective populations, giving them access to high quality, haplotypically diverse CBUs.