



Health studies: Opportunities for the development of Human Biomonitoring in Europe

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BACKGROUND

Human Biomonitoring (HBM) and surveys with a health examination component are very similar regarding infrastructure and procedures necessary for their implementation. Both rely on planned fieldwork for collection of data and biological materials, which usually needs considerable financing. Thus, combined planning and fieldwork could result in more cost-effective ways to conduct health and environmental monitoring. As such, within the HBM4EU project an inventory of the health studies available which could include an HBM module was performed.

METHODS

An online questionnaire was developed to collect information on recently conducted, ongoing or planned health studies in the EU and EEA countries, in which an HBM module could be included. The link to the questionnaire was distributed with the help of the National Hub Contact Points of the HBM4EU project.

RESULTS

From the 58 different studies included in this inventory, one quarter were health examination surveys (HES), one quarter were targeted health studies and another quarter were combined HES and HBM surveys (Figure 1).

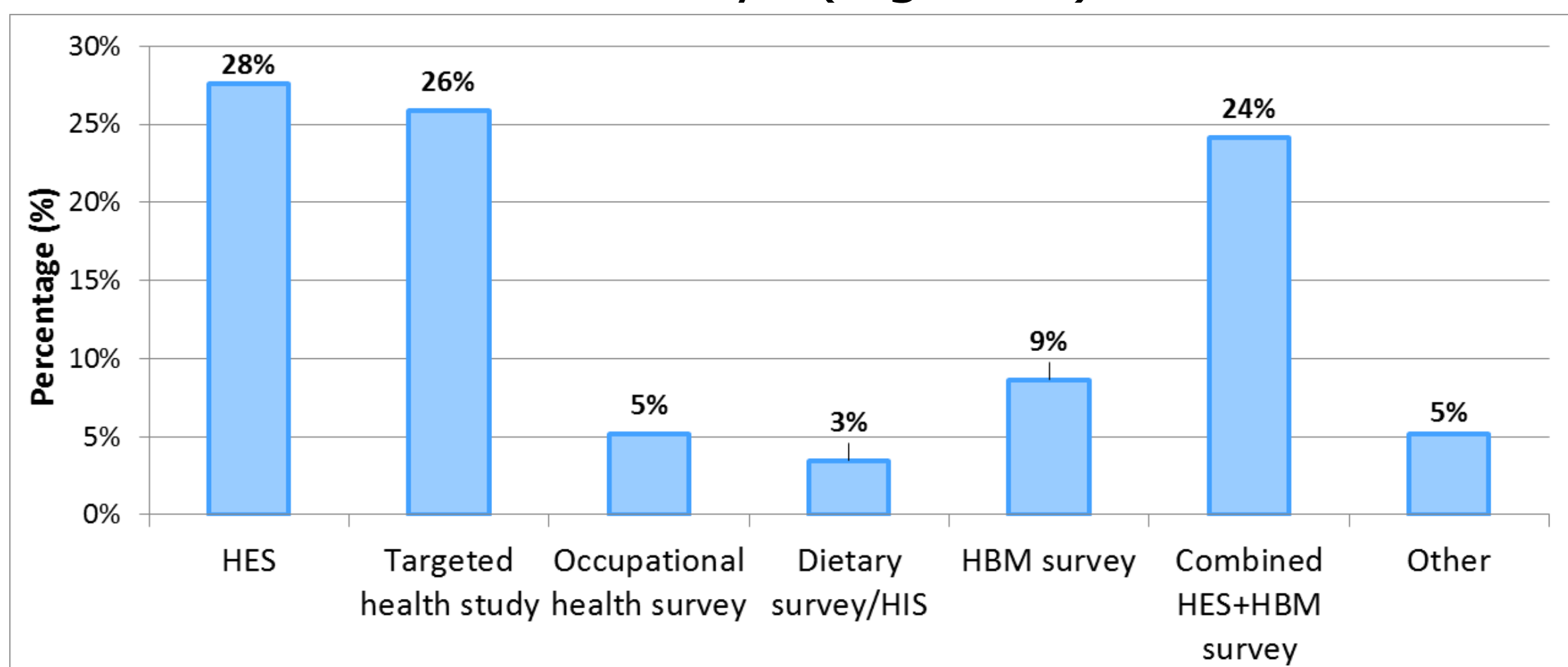


Figure 1 – Survey type in EU and EEA countries (1999 to 2019)

Half of the studies were longitudinal and presented the possibility of introducing an HBM component in the future (Figure 2).

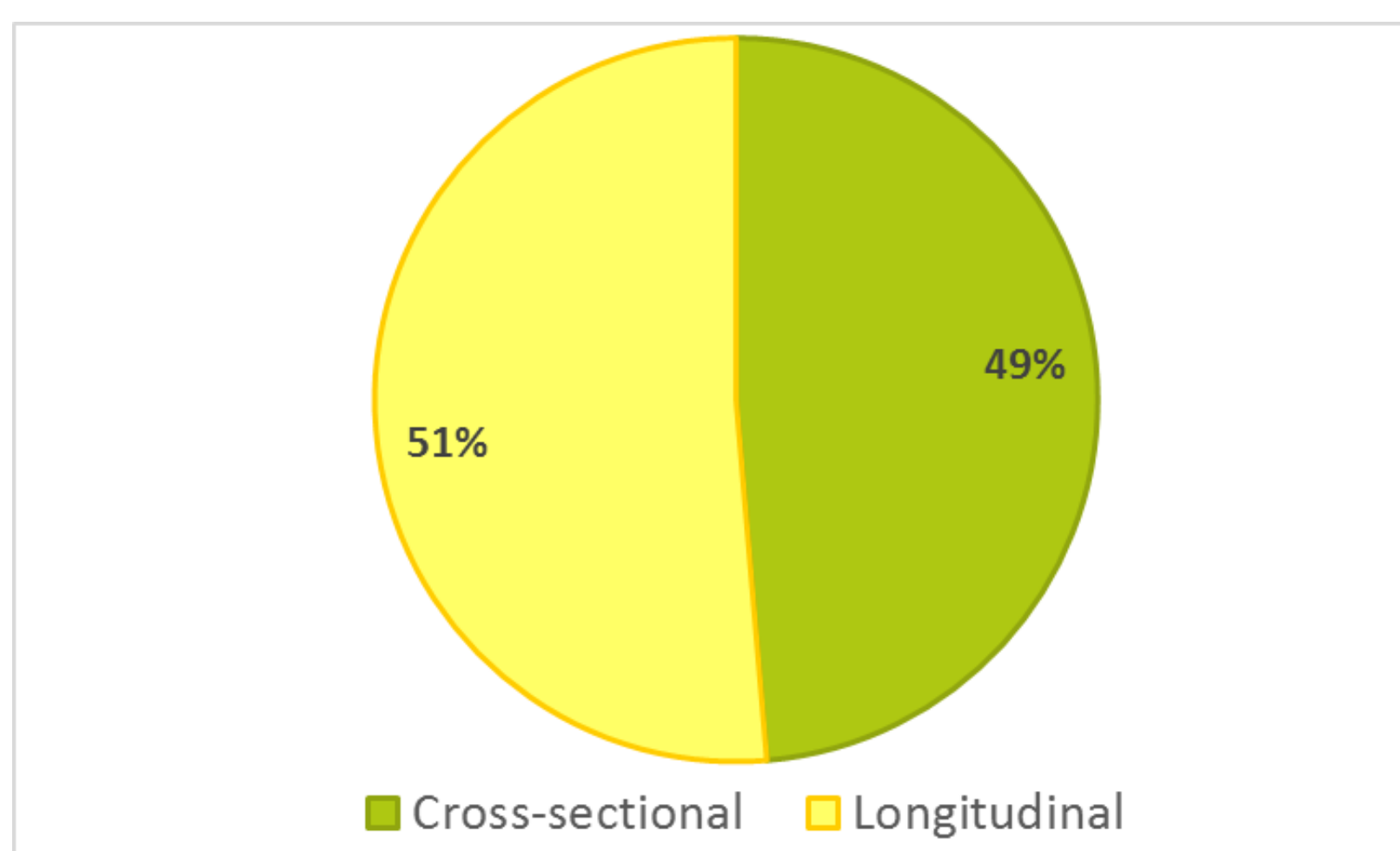


Figure 2 – Type of study in EU and EEA countries (1999 to 2019)

Most studies for which data was reported had public funding either from governments or from other public grants (national or European) (Figure 3).

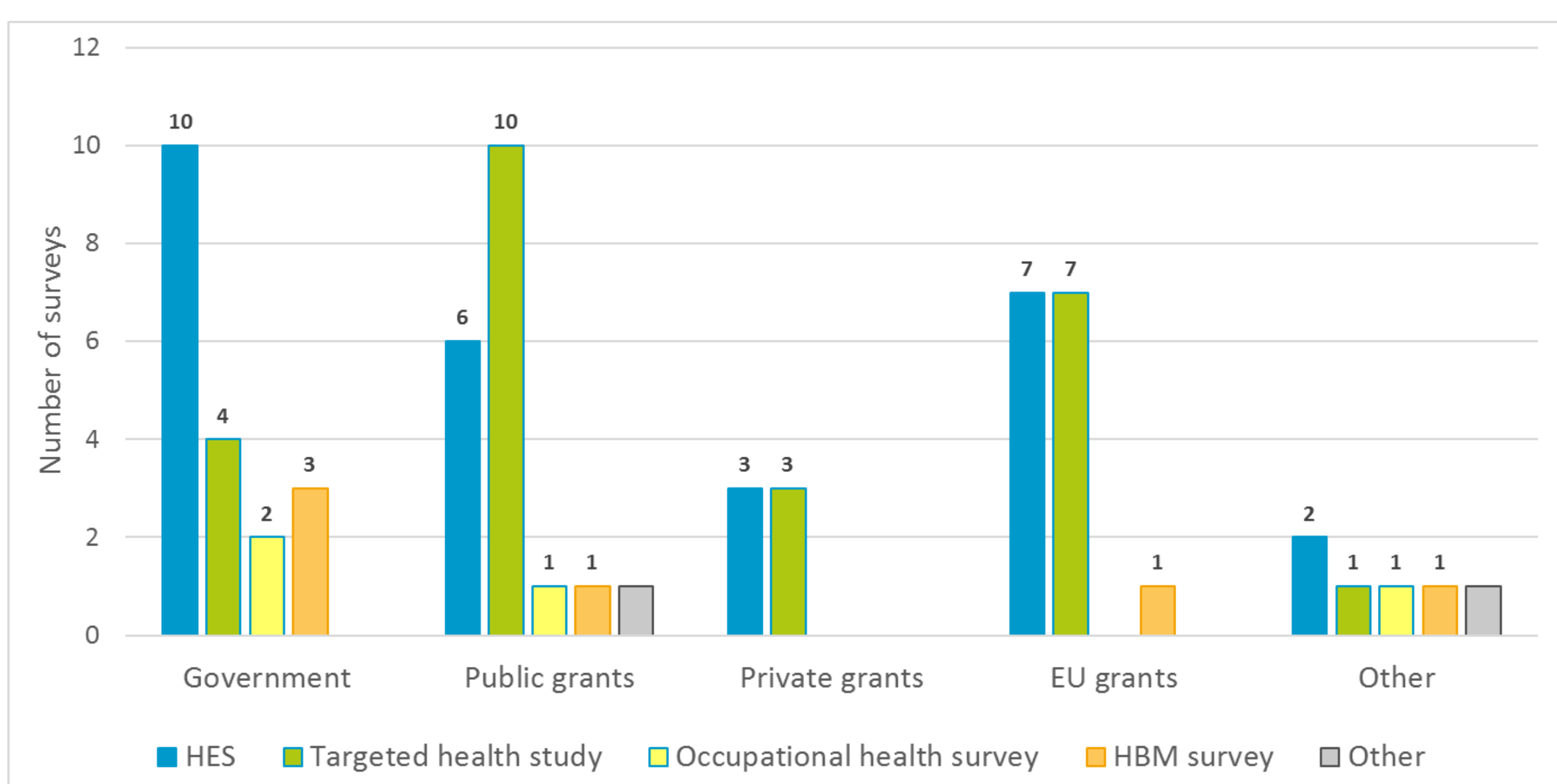


Figure 3 – Funding source per type of study in EU and EEA countries (1999 to 2019)

The vast majority of the studies which did not have an HBM component, included the collection and storage of biological samples, frequently blood, plasma, serum or DNA (Figures 4 and 5).

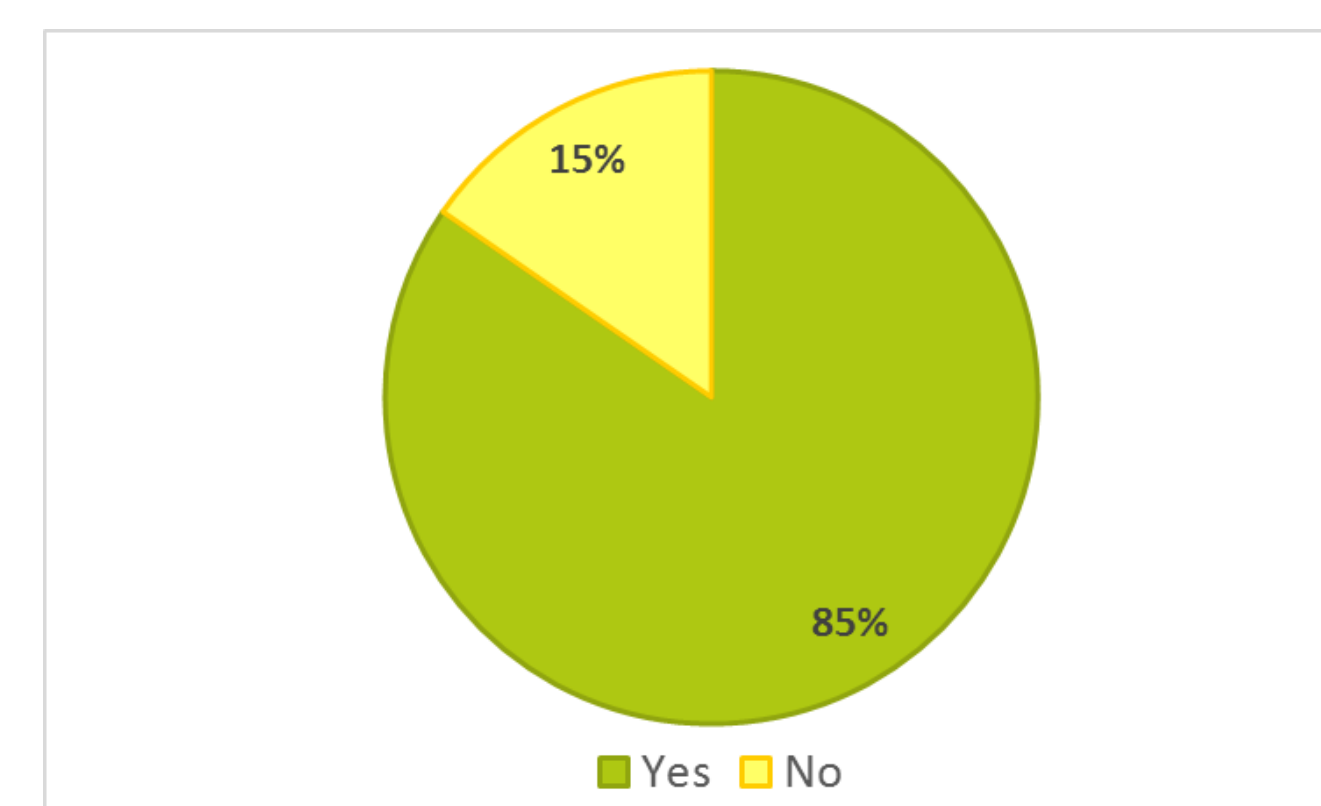


Figure 4 – Collection of biological samples in EU health studies (1999 to 2019)

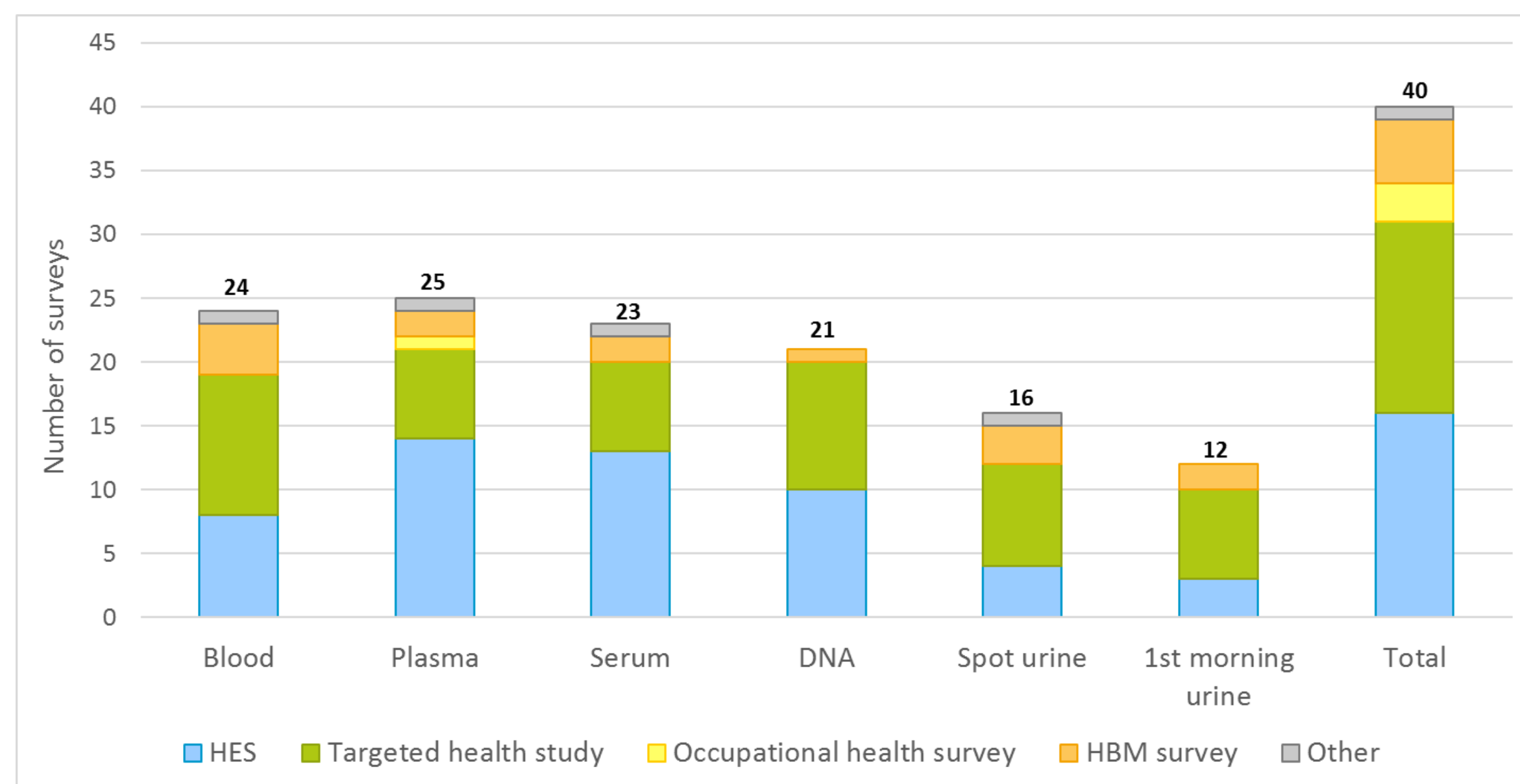


Figure 5 – Biological samples collected per survey type in EU and EEA countries (1999 to 2019)

More than 50% of the studies reported that measurement of chemicals had already performed or was planned to be performed. The most frequently measured chemicals were phthalates, bisphenols and cadmium.

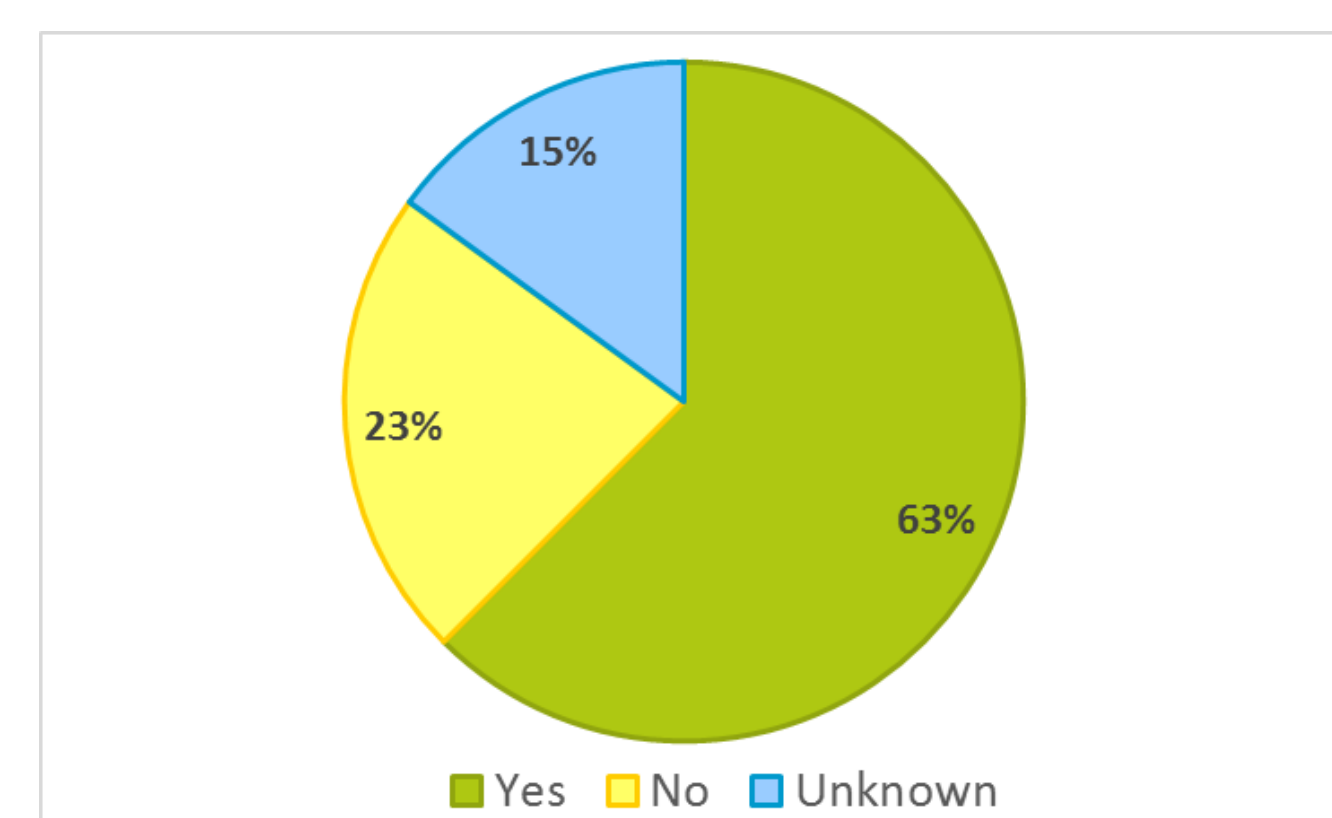


Figure 6 – Measurement of chemicals (performed or planned)

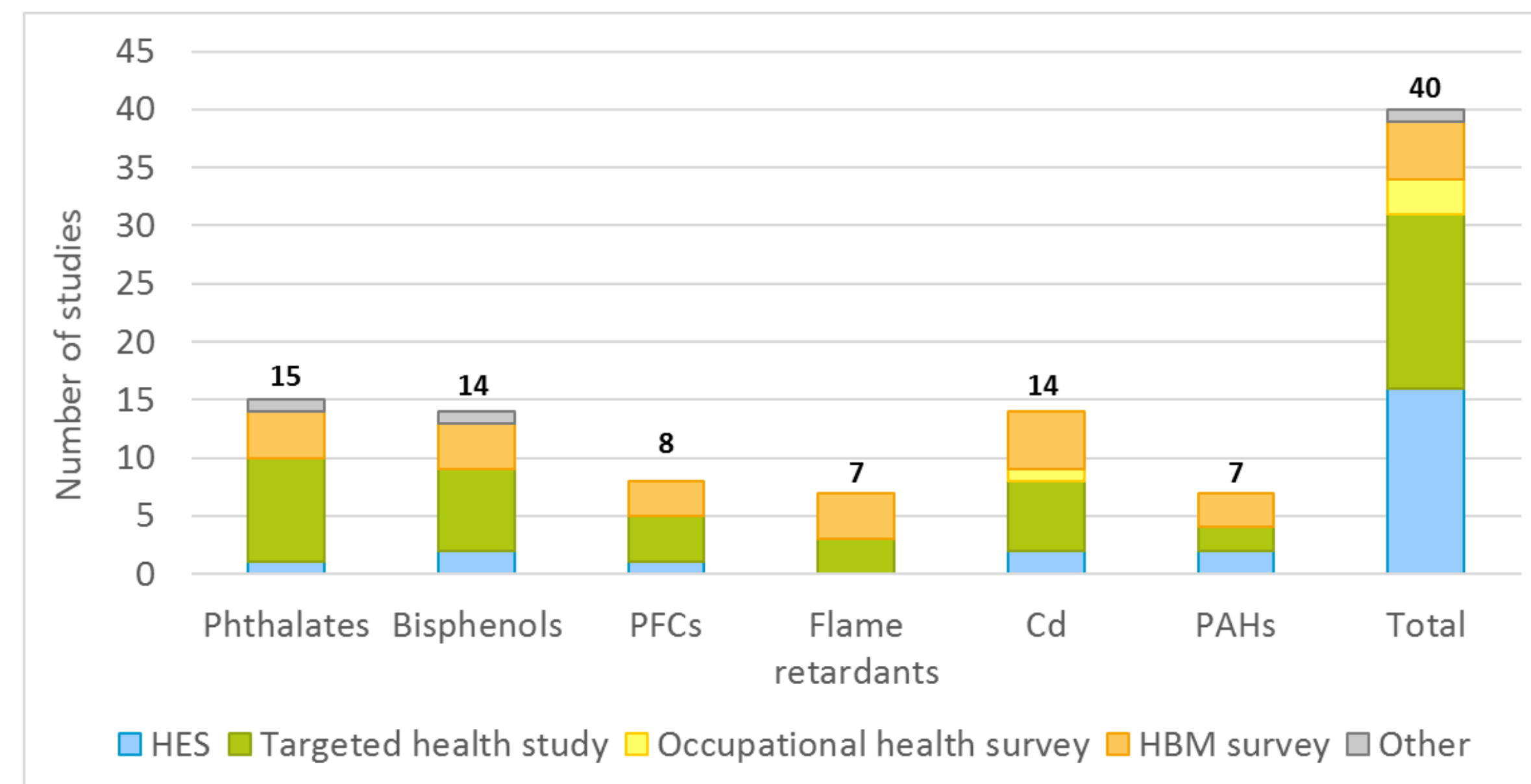


Figure 7 – Chemicals measured per survey type in EU and EEA countries (1999 to 2019)

CONCLUSIONS

In vast majority of the studies included in the inventory, biological samples were collected and stored, raising question of its use in HBM studies for the analyses of chemicals of interest. About 50% of these studies already had ethical approval to measure chemicals from collected samples.

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