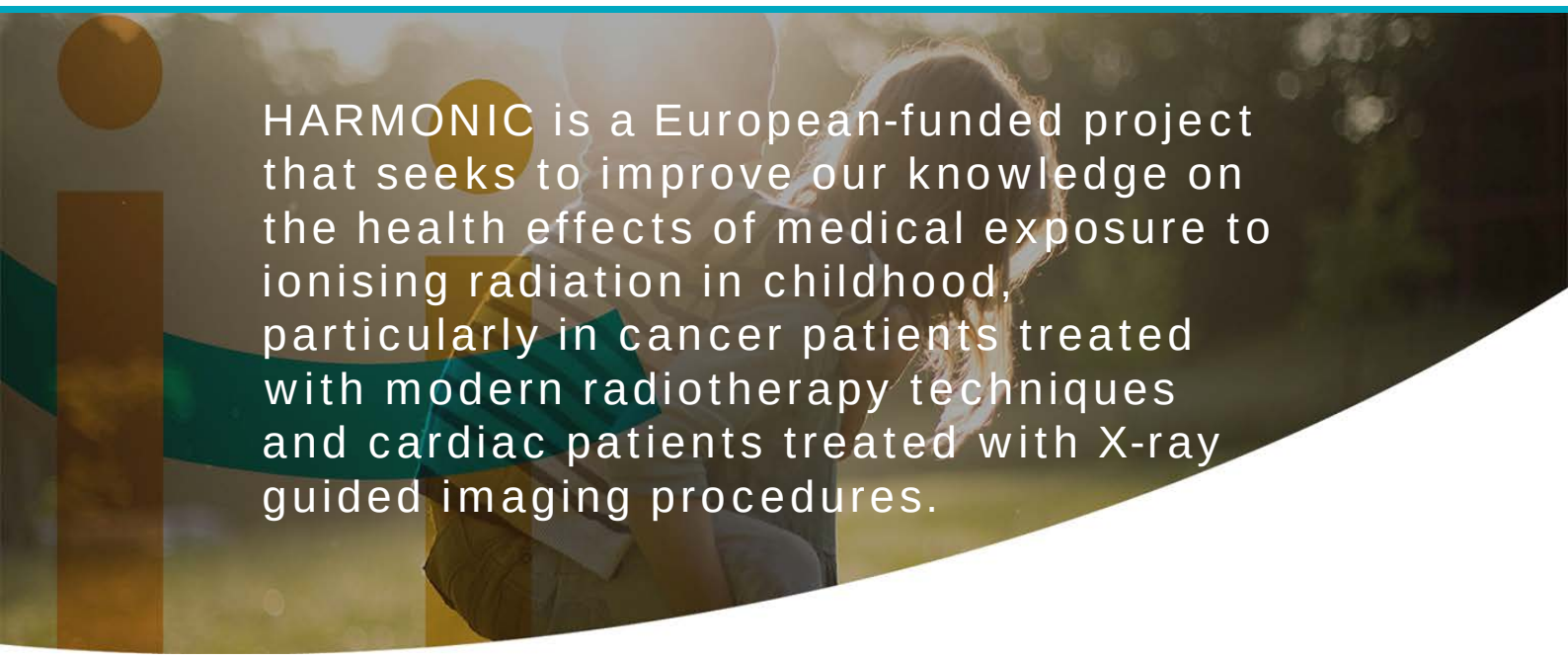

HARMONIC is a European-funded project that seeks to improve our knowledge on the health effects of medical exposure to ionising radiation in childhood, particularly in cancer patients treated with modern radiotherapy techniques and cardiac patients treated with X-ray guided imaging procedures.

WP2 Radiotherapy

We are building the **first international registry** of paediatric cancer patients treated with modern radiotherapy techniques.

Activities in the first 2 years of the project were devoted to setting up the infrastructure of the registry and protocols for data collection and analyses. The main objective is to provide crucial information on clinical efficiency and the risk of developing diseases as a result of radiation exposure, as well as the impact on the patient's quality of life.

WP3 Cardiac catheterization

We are pooling data on approximately **100,000 paediatric patients who underwent cardiac catheterization** in Europe.

We developed a common protocol for data collection in medical centres performing paediatric cardiac catheterization and are currently collecting information from 7 European countries to study the relationship between radiation exposure early in life, and subsequent cancer in children treated for cardiac birth defects.

WP4 Dosimetry

We established the strategy for estimating radiation doses received by different organs of the body for both cohorts of the study.

We set-up and adapted computational frameworks and models to the project specificities and compared these with experimental data obtained from the irradiation of paediatric phantoms. We are developing computational tools to facilitate the collection of dosimetric data and the estimation of organ doses.

WP5 Biology

We are investigating the **biological mechanisms** and **potential biomarkers** of adverse health effects, which will help to select optimal diagnostic and therapeutic strategies for each patient.

We will focus on the development of tumours and vascular disease. We have developed a detailed protocol for collecting, preparing, storing and transporting saliva and blood samples, and have performed pilot studies to test the quality and quantity of these samples required for the proposed analyses.

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