mHealth applications now available for the DigiCare4You project

DigiCare4You aims to improve the early prevention and management of Type 2 Diabetes (T2D) and hypertension (HTN). The project's overall objective is to assess the scalability and transferability of an intersectoral, innovative person-centred solution involving digital tools, aimed at empowering families and integrating community care services in Europe for the prevention and management T2D and HTN.

The DigiCare4You solution consists of two core components. Firstly, a two-stage screening procedure to identify families living with pre-diabetes, T2D and/or HTN will be conducted at schools and local health centres. This will be followed by the enrolment of those families identified as living with the conditions or at risk of developing them in an mHealth self-management intervention, which aims to promote healthy and active lifestyles.

DigiCare4You's Work Package 4 (WP4) is responsible for the adaptation and implementation plan of the DigiCare4You solution. As part of WP4, DigiCare4You consortium partner, **METEDA**, developed four mHealth tools (clinical decision support platforms for HCPs and mobile applications for participants) for the intervention and monitoring process. These can be grouped into two main intervention areas. Two mHealth tools relate to **personalised diet/lifestyle changes** and **pre-diabetes** (one clinical decision support platform for HCPs and one self-management application for the participants) and another two for the **management of T2D**, one focused on clinical decision support for HCPs and one focused on self-management for participants. It is possible for a user to combine both, for example when a person living with T2D or HTN needs to follow a personalised meal plan.

All the mHealth applications developed by METEDA have been adapted to the local context and requirement by collaborating with partner, **Sant ´Anna School of Advanced Studies (SSSA)**. The results of a web survey developed by SSSA on the preferences and needs of local stakeholders relating to digital tools was used to adapt the mHealth applications and to develop training materials appropriate for each country for the use of these tools.
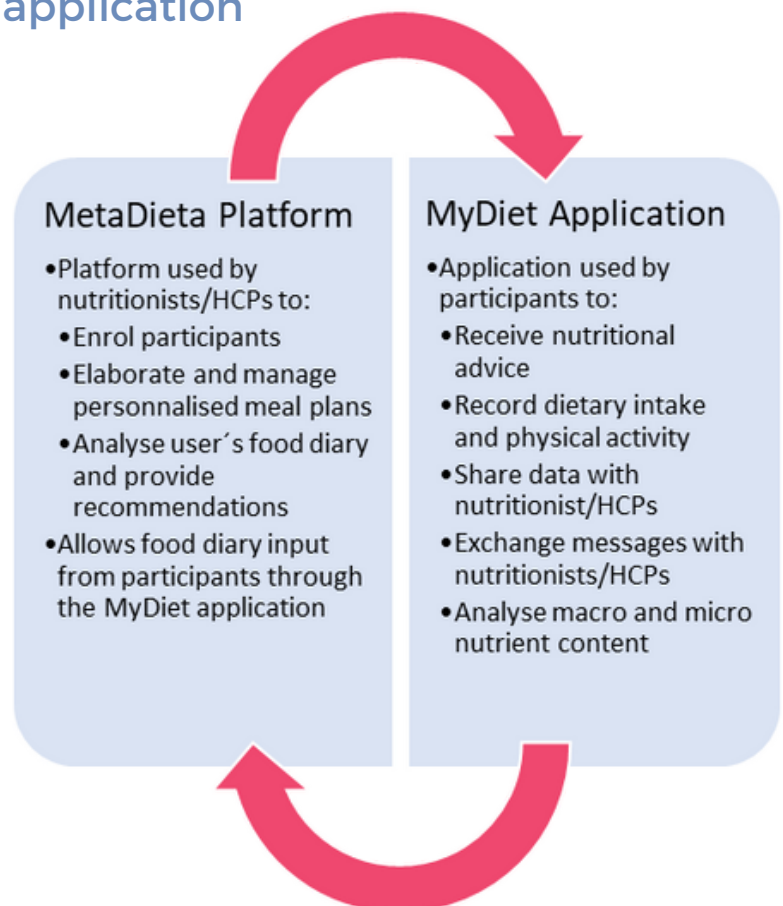
METEDA also worked closely with the feedback received for the development of the two-stage screening procedure tools by partner, Centre for Research and Technology Hellas (CERTH), to follow a similar approach to user interaction (more information on the screening tools can be found here: www.digicare4you.eu).

Strict user consent and privacy features have been implemented as per GDPR regulations and high-security measures to protect patient data have been guaranteed through database encryption. The two mobile applications that have been developed are available for both Android and iOS operating systems.
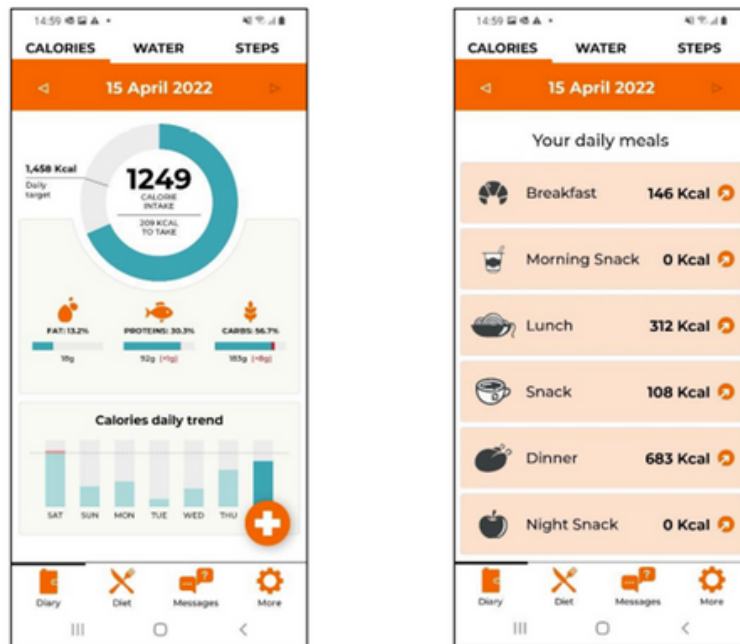
MetaDieta platform and MyDiet application

MetaDieta and MyDiet are the main mHealth tools to manage personalised diet, lifestyle changes and pre-diabetes interventions.

The platform's food database and the application has been expanded to include local foods from the four intervention countries. More than 320 local dishes and their nutritional information were added manually to the database.

MetaDieta Platform
- Platform used by nutritionists/HCPs to:
  - Enrol participants
  - Elaborate and manage personalised meal plans
  - Analyse user´s food diary and provide recommendations
- Allows food diary input from participants through the MyDiet application

MyDiet Application
- Application used by participants to:
  - Receive nutritional advice
  - Record dietary intake and physical activity
  - Share data with nutritionist/HCPs
  - Exchange messages with nutritionists/HCPs
  - Analyse macro and micro nutrient content
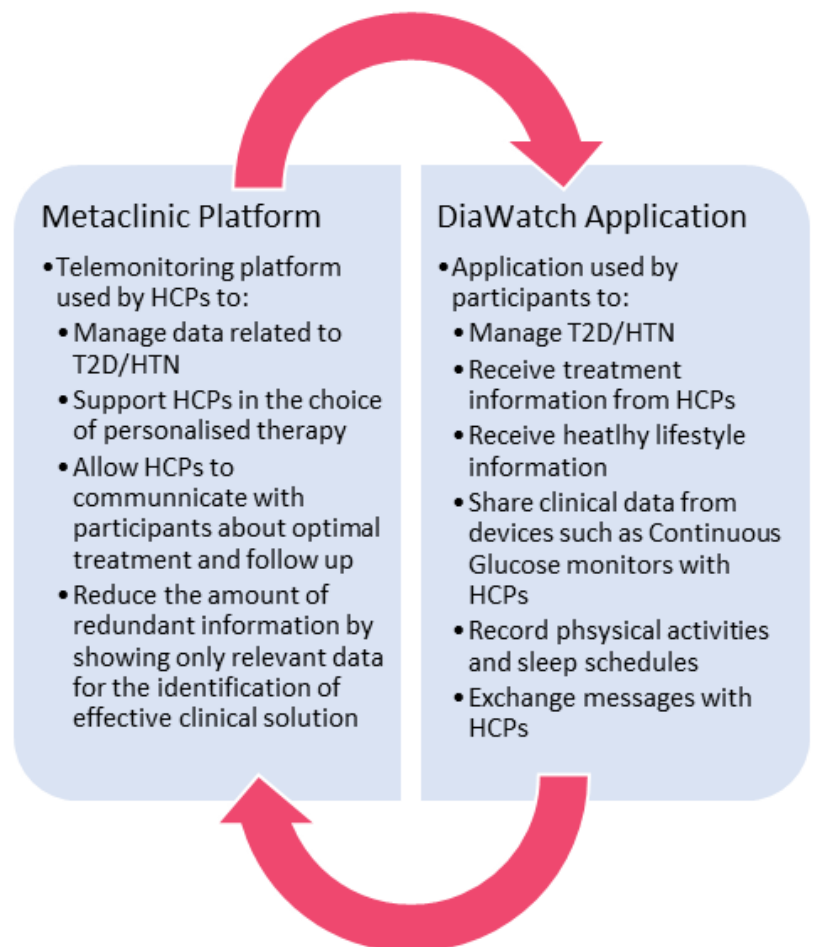
DigiCare4You

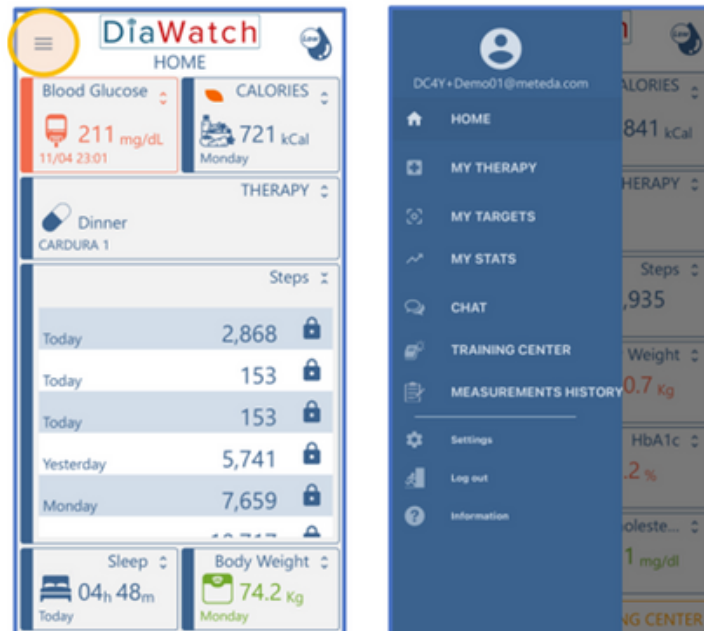*My Diet application user interface:*

MetaDieta platform and MyDiet application

Metaclinic and DiaWatch are the tools developed to manage people living with T2D and/or HTN.

Twelve modules in the DiaWatch application allow users to input and view blood glucose levels, daily calory intake, daily steps, sleep schedule, therapies to be followed, training materials and more. The application has an easy-to-use colour coded interface allowing participants to know which area needs their attention. Users can also connect their smartwatches or other devices to the application enabling them to transfer data in a simple way instead of manually inputting it.

Metaclinic Platform

- Telemonitoring platform used by HCPs to:
  - Manage data related to T2D/HTN
  - Support HCPs in the choice of personalised therapy
  - Allow HCPs to communnicate with participants about optimal treatment and follow up
  - Reduce the amount of redundant information by showing only relevant data for the identification of effective clinical solution

DiaWatch Application

- Application used by participants to:
  - Manage T2D/HTN
  - Receive treatment information from HCPs
  - Receive heatlhy lifestyle information
  - Share clinical data from devices such as Continuous Glucose monitors with HCPs
  - Record phsysical activities and sleep schedules
  - Exchange messages with HCPs

DiaWatch user interface:

METEDA continuously works on improving the effectiveness of its applications by incorporating feedback from HCPs and participants. In coming months, end users and implementers from the four implementation countries will undergo training sessions on these solutions before they are implemented into the intervention process of the DigiCare4You mHealth solution.

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www.digicare4you.eu