UNIONE EUROPEA
FONDI STRUTTURALI E DI INVESTIMENTO EUROPEI

Ministero dell'Istruzione, dell'Università e della Ricerca

PON RICERCA E INNOVAZIONE 2014 - 2020

TALISMAN

Customized assistance technologies for improving the quality of life

A SUCCESSFUL PUBLIC-PRIVATE INITIATIVE TO FOSTER THE DIGITAL TRANSFORMATION OF CLINICAL HEALTHCARE PROCESSES IN SUPPORT OF CONTINUITY OF CARE.

www.progettotalisman.it

Project co-funded by the European Regional Development Fund (ERDF) within the framework of the National Operational Programme "Research and Innovation" (PON R&I) 2017-2020 - Axis II - Action 2 of the Ministry of Education, University and Research.

PURPOSE

- To define a new concept of frailty, based on the multidimensional integration of parameters that describe various dimensions of the subject (social, psychological, biological and functional) and, with their interaction, determine its overall characteristics.
- To integrate services in a sustainable, iterative, incremental ecosystem, based on the concepts of continuum of care and integrated territorial pathways, able to:
  - intervene in the care model by specifying, formalizing and supporting the actions of enrolment, multidisciplinary assessment, integrated social-health plans, ongoing reassessment.
  - Make territorial case management activities operational and, at the same time, economically viable, to foster effective citizen/patient empowerment and to have an impact, in terms of effectiveness and efficiency, on the management of frailty and chronicity.
  - Foster business models that go beyond the simple approach based on performance improvement.

The **TALIsMAn project** has allowed the realization of **an enabling technology infrastructure**, based on the principles of semantic interoperability and on an **open innovation approach**. This has led to the integration of a series of solutions able to support the implementation of this **new care model**, to enable an effective clinical health governance and the actual **digital transformation of territorial care processes**.

AREAS OF INTERVENTION

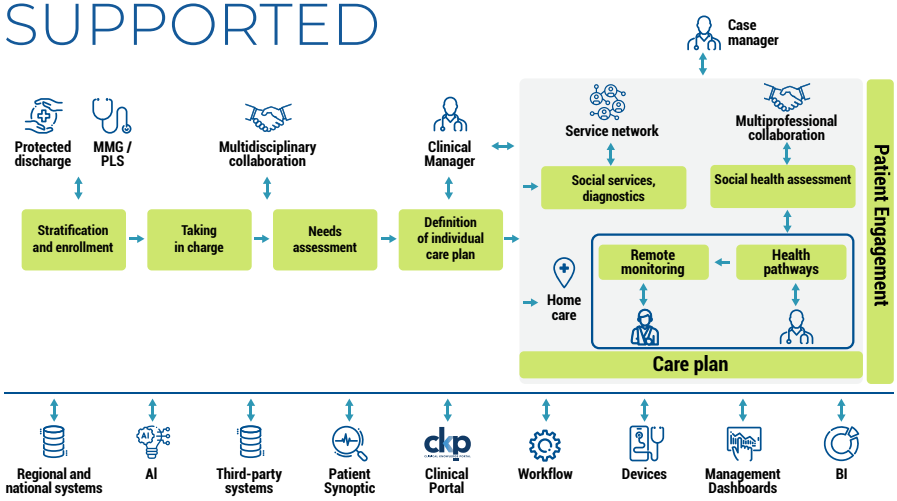
FRAILTY MANAGEMENT
Definition of pathways that include multidimensional assessment of the citizen's care needs (physical, biological, psychological and social).

CHRONICITY MANAGEMENT
Stratification, secondary prevention, taking in charge, adherence to PDTAs and definition of personalized care plans, introduction of telemedicine tools for actual continuity of care from hospital to home

CITIZEN EMPOWERMENT
Involvement via mobile APP in their care plan, training, empowerment on therapeutic care adherence and tertiary prevention.

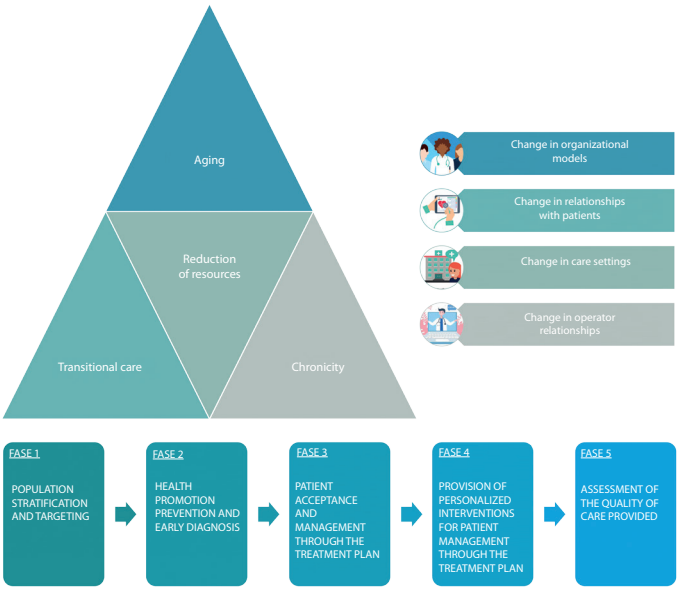
HEALTH PROMOTION
Clinical governance tools for working on health determinants, reducing clinical risks and ensuring efficiency and effectiveness in accordance with the Population Health Management paradigm

THE CARE MODEL SUPPORTED



METHODOLOGICAL APPROACH

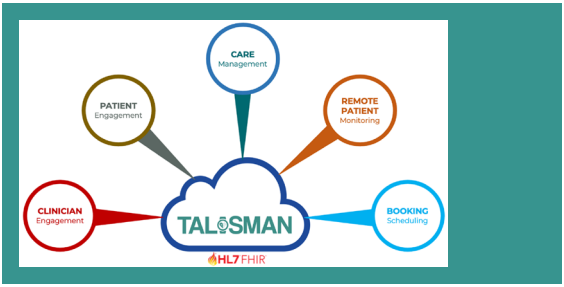
- Definition by the public health component of new care models, data governance and related clinical health services in accordance with the **CAREPUGLIA3.0** model.



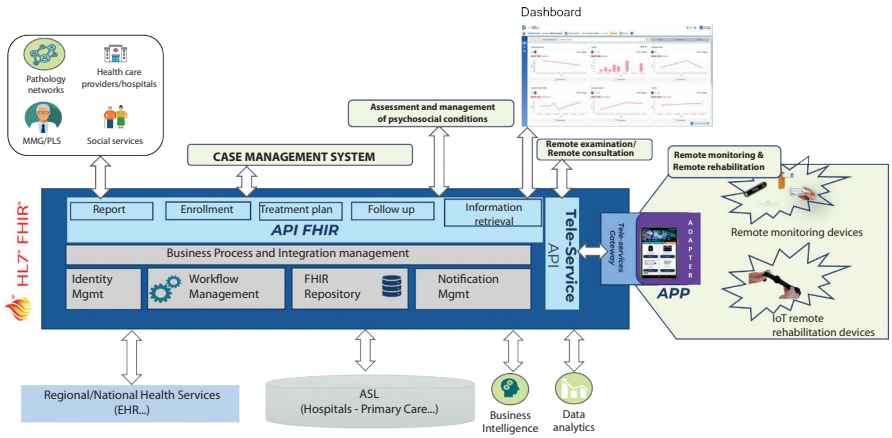
- Definition of an API ecosystem, based on standard and open integration profiles (HL7 FHIR) related to integrated territorial care processes.
- Implementation of an enabling platform that supports the API ecosystem on the basis of interoperability and application cooperation principles.
- Implementation and integration of value-added solutions and apps for case management, follow-up ,and remote monitoring and care services.
- Cloud platform deployment of the solution and start of the trial.
- Operational definition of services to be supported: logistics (allocation of operators, distribution of monitoring kits, ...); training for operators and citizens.
- Ongoing monitoring and assessment of trial outcomes, and evaluation of clinical governance.

ENABLING **PLATFORM**

Technological and semantic interoperability based on international reference standards (HL7 FHIR) and open innovation approach.



The enabling platform includes **interoperability** services, repositories for **sharing clinical-health information**, and care **workflow management** mechanisms. It incorporates: a case management system, psychological assessment and management solutions, remote monitoring, examination and care services, and a Cognitive Business Intelligence system. Additionally, there are solutions to manage interaction between patients or with external persons according to gamification modes, also useful for training cognitive and mnemonic skills, and for enabling social networking in order to improve social inclusion.



All software components of the project were developed in agreement with the new General Data Protection Regulation (GDPR).

TALISMAN SERVICES: CASE MANAGEMENT

STRATIFICATION AND ENROLLMENT

- Stratification of the population through the analysis of the Clinical File or the creation of clusters and cohorts based on information from company information systems.
- Multi-channel reporting of cases to territorial structures, through standardization of assessment forms.

PATIENT CLASSIFICATION

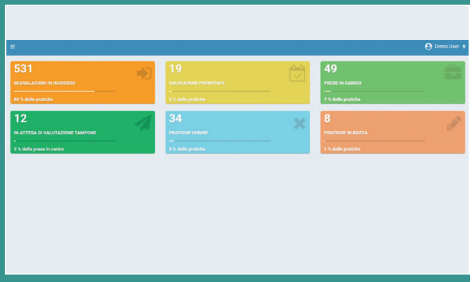
- Retrieval and verification of enrollment information.
- Multidimensional assessment by cooperation of multidisciplinary case management team.

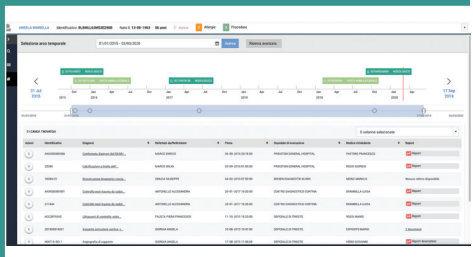
PLAN DEFINITION

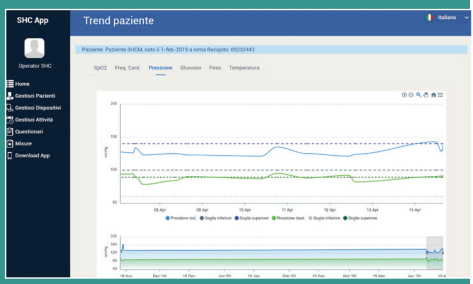
- Identification of referral PDTA.
- Definition of a customized Care Plan based on PDTA guidelines, after the identification of social and health needs.
- Activation of prescriptions.

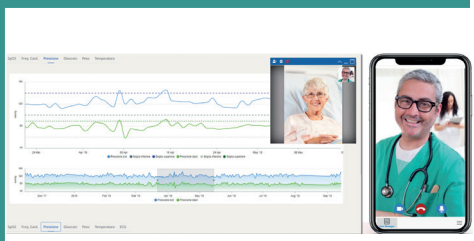
FOLLOW UP

- Verification of the progress of the care pathway.
- Availability of dashboards and synoptics.
- Integration of Business analytics tools.
- Possibility of activating remote examination and remote checking sessions.
- Information feedback to the various pathway stakeholders.





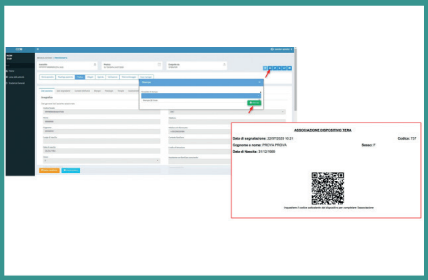




TALISMAN SERVICES: REMOTE MEDICINE

REMOTE MONITORING PLAN DEFINITION

Defined at the same time as the Personalized Care Plan. It includes the type of measurements to be taken, timing of measurements, and threshold values. Patients may be asked to fill out questionnaires.
A QR Code is produced to associate uniquely the assigned monitoring kit to the patient himself.

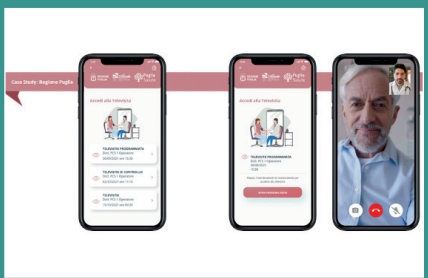


ACTIVATION OF MONITORING

The citizen/patient uses an APP to pair with the kit and to pair the kit with the associated sensory devices; the measurements are made in a guided way by means of the APP.
The system activates notifications based on the timing of the measurements.
The patient can also take measurements outside the plan.
All data are sent to the Talisman platform and shared with the enabled operators.

REMOTE EXAMINATION SESSIONS

Remote examination sessions between doctor and patient can be activated, either from the plan or by direct request. The patient always participates via the same APP.



TRIAL SCENARIOS

SCENARIO A: Proximity medicine

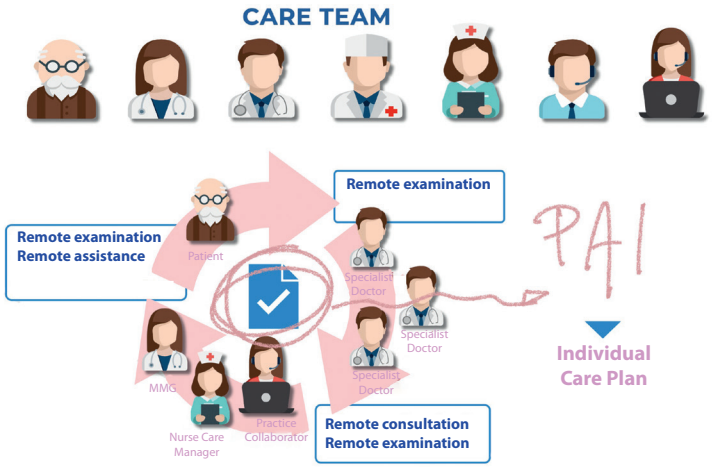
Validation of methods and solutions for early detection of frailty risks and continuity of care.
The experimentation envisages the involvement of pharmacies as territorially distributed Points of Care to carry out an assessment of the quality of care.

SCENARIO B: Integrated territorial management

This scenario, conducted by AReSS Regional Strategic Agency for Health and Social Care, a partner in the project, in accordance with the objectives of the CarePuglia 3.0 regional program, aims to assure chronic patients about appropriate continuity of care actions, through "proactive" taking in charge, associated with patient empowerment processes and secondary and tertiary prevention interventions.

REGIONE PUGLIA

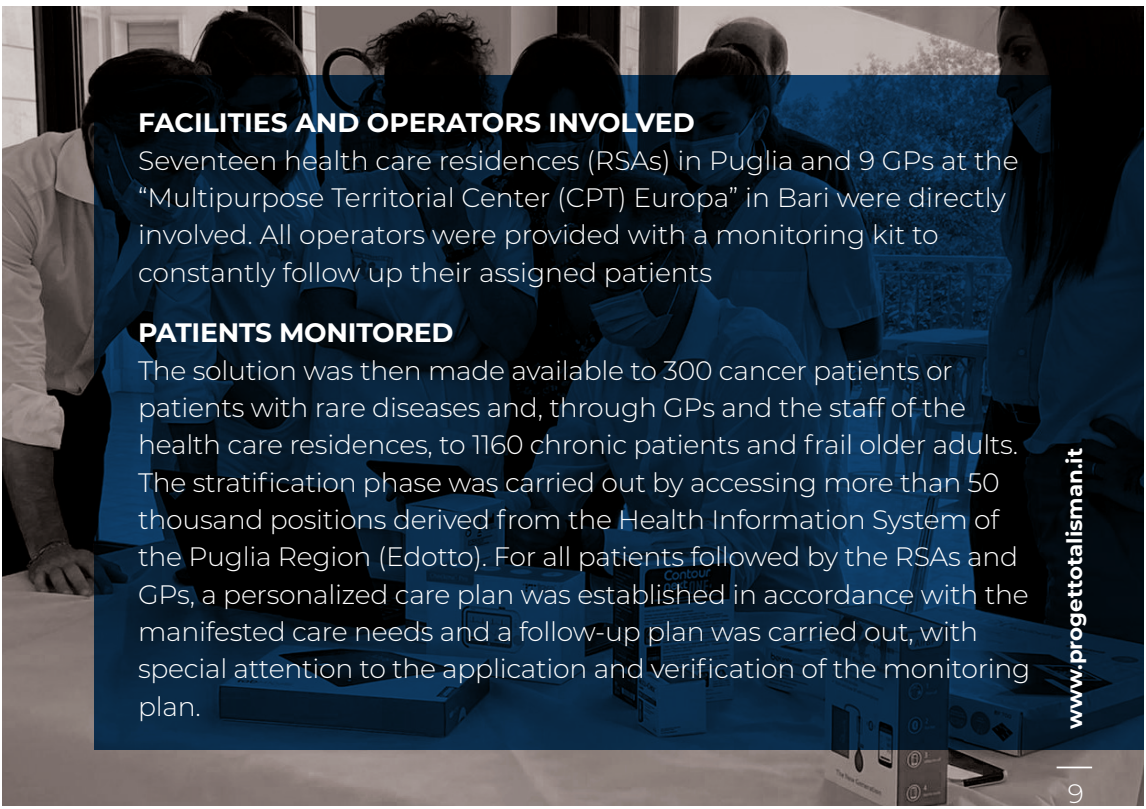
Agenzia Regionale per la Salute ed il Sociale Puglia



DATA FROM THE **TRIAL IN PUGLIA**

DEPLOYMENT AND LAUNCH OF THE TALISMAN SOLUTION

Solution fully deployed in cloud environment.
Eighty Remote Monitoring Kits were distributed, with different types of integrated devices: tablets, a diagnostic scale, a Bluetooth glucometer, a Bluetooth sphygmomanometer, an electrocardiographic multiparameter device, and a Tensor Tip device.
167 workers including health care and administrative staff of the involved facilities were trained and weekly reports on purchasing data were collected.



FACILITIES AND OPERATORS INVOLVED

Seventeen health care residences (RSAs) in Puglia and 9 GPs at the "Multipurpose Territorial Center (CPT) Europa" in Bari were directly involved. All operators were provided with a monitoring kit to constantly follow up their assigned patients

PATIENTS MONITORED

The solution was then made available to 300 cancer patients or patients with rare diseases and, through GPs and the staff of the health care residences, to 1160 chronic patients and frail older adults. The stratification phase was carried out by accessing more than 50 thousand positions derived from the Health Information System of the Puglia Region (Edotto). For all patients followed by the RSAs and GPs, a personalized care plan was established in accordance with the manifested care needs and a follow-up plan was carried out, with special attention to the application and verification of the monitoring plan.

TALISMAN

REFERENCES

https://www.progettotalisman.it
https://www.facebook.com/progettotalisman

EVENTS AND AWARDS

- Winner of the Milan Polytechnic Digital Innovation in Healthcare Award 2021 - category “Services for hospital-territory integration”
- Organized conference on ICT, Remote medicine and BPM
- Invited to the Mediterranean Forum and the Industry Digital Evolution (IDE) 2021 conference

CONSORTIUM