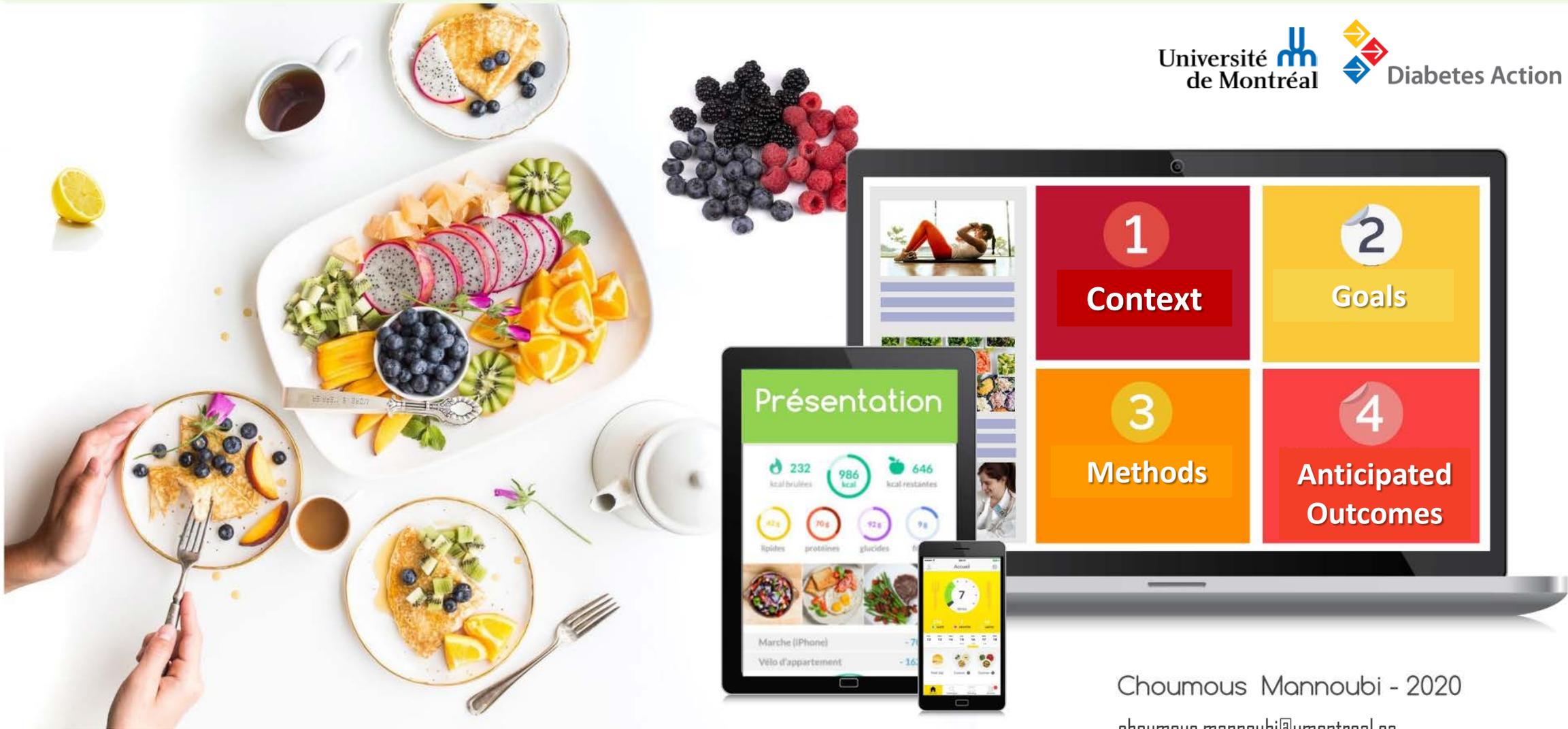


Needs analysis and co-design of a tele-nutrition platform for the therapeutic management of patients with chronic diseases



Context

The Burden of Chronic Disease



44%

Adults 20 years
and over in
Canada



Chronic diseases have multifactorial etiologies. 90% of those living with a chronic disease presented at least one other comorbidity (1).

Patients require lifelong management of the disease. This is why chronic disease management is a real challenge for the health system in terms of costs, cause of disability and death (2).

Nutrition is at the heart of the onset, maintenance and worsening of chronic diseases (3).

1) Québec Opdq. Ratios d'effectifs en nutrition pour la population inscrite dans les groupes de médecine familiale (GMF). 2015.

2) Burke LE, Ma J, Azar KM, Bennett GG, Peterson ED, Zheng Y, et al. Current science on consumer use of mobile health for cardiovascular disease prevention: a scientific statement from the American Heart Association. *Circulation*. 2015;132(12):1157-213

3) WHO J CF. <Diet, nutrition and the prevention of chronic diseases.>. World Health Organ Tech Rep Ser 2003;916(i-viii).

Context

Telehealth



Telehealth would improve the supply of care by developing performance (1):

- medical data management
- exchange of medical data
- storage of medical data
- personalize health care

It would reduce (2):

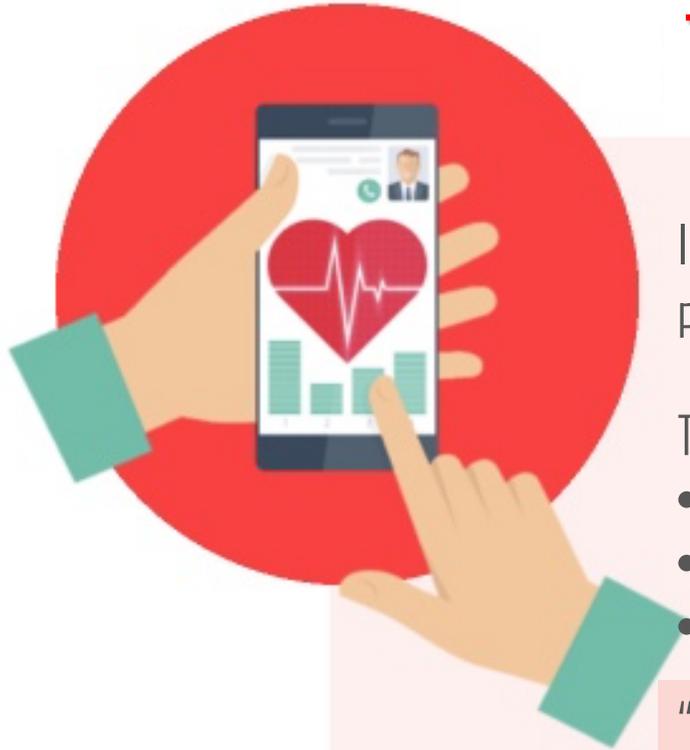
- the costs
- geographic disparities
- economic disparities

1) Paré G, Sicotte C. Les technologies de l'information et la transformation de l'offre de soins. Cahier du GRESI. 2004:04-.

2) Snoswell C, Smith AC, Scuffham PA, Whitty JA. Economic evaluation strategies in telehealth: Obtaining a more holistic valuation of telehealth interventions. Journal of telemedicine and telecare. 2017;23(9):792-6.

Context

Telehealth



In the context of the COVID19 pandemic, there is a growing interest in telehealth and a real surge in political will.

The fears expressed by patients are (3):

- the relationship to technology,
- medical data security
- the risk of dehumanization of care services

"Telenutrition involves the interactive use, by a registered dietitian-nutritionist, of electronic information and telecommunications technologies to implement the process of nutritional care with patients or clients in a remote location, in accordance with the provisions of their state license, if applicable." (4)

(3) Alami H, Gagnon M-P, Fortin J-P, editors. La participation des usagers aux processus de mise en œuvre des programmes de télésanté pour favoriser l'adoption et l'utilisation des services: Une revue de littérature. JFIM; 2014

(4) Practicing Telehealth: Academy of Nutrition and Dietetics; 2018 [Available from: <https://www.eatrightpro.org/practice/practice-resources/telehealth/practicing-telehealth>].

Context



The establishment of a structure promoting inter-professional collaboration is recommended by the authorities in order to meet the accessibility and long-term monitoring needs of people with chronic diseases. In 2001, the Quebec Ministry of Health and Social Services (MSSS) proposed the establishment of FMGs in order to improve the organization of care and front-line services.



Context

Problematic



Family medicine groups (FMG) are the second usual place of care for the population. 2% of dietitians in Quebec practice in FMGs⁽¹⁾. The current offer of services in several facilities of the health and social services network is not adapted to the needs of the population as reported by the evidence ⁽²⁾.

(1) Québec Opdq. Ratios d'effectifs en nutrition pour la population inscrite dans les groupes de médecine familiale (GMF). 2015.

(2) Organization WH. Telemedicine: opportunities and developments in member states. Report on the second global survey on eHealth: World Health Organization; 2010.

Context

Problematic

This generates :

- poor accessibility to dietetic services in the public sector.
- low referral rate of patients.
- patient adherence is often low.

The presence of two full-time nutritionists per FMG comprising a clientele of 1000 people would be required⁽¹⁾.



(1) Québec Opdq. Ratios d'effectifs en nutrition pour la population inscrite dans les groupes de médecine familiale (GMF). 2015.

Goals

The main objective is to document the design requirements for the development of a tele-nutrition platform that optimizes the remote therapeutic management of people with chronic diseases on the front line.

1

Phase 1: Identification of tasks and functions integrated into the platform

Specific objectives

Identify and classify the different characteristics that must be present in the platform to support effectiveness according to nutritionists

Identify, classify, analyze existing telenutrition systems in order to document the extent of the support offered and identify the strengths and weaknesses of each tool according to the evidence

2

Phase 2: Co-design and development of the prototype

Specific objectives

Assign functionality to relevant tasks, user requirements, usability, and organizational requirements

Develop in co-construction the prototype of the tele-nutrition platform

Methodology

We will take a user-centric approach to bring this project to fruition. An iterative two-phase process will involve clinicians, patients, software developers and multidisciplinary researchers.

- Phase 1: Identification of tasks and functions integrated into the platform
- Phase 2: Co-design and development of the prototype



Methodology

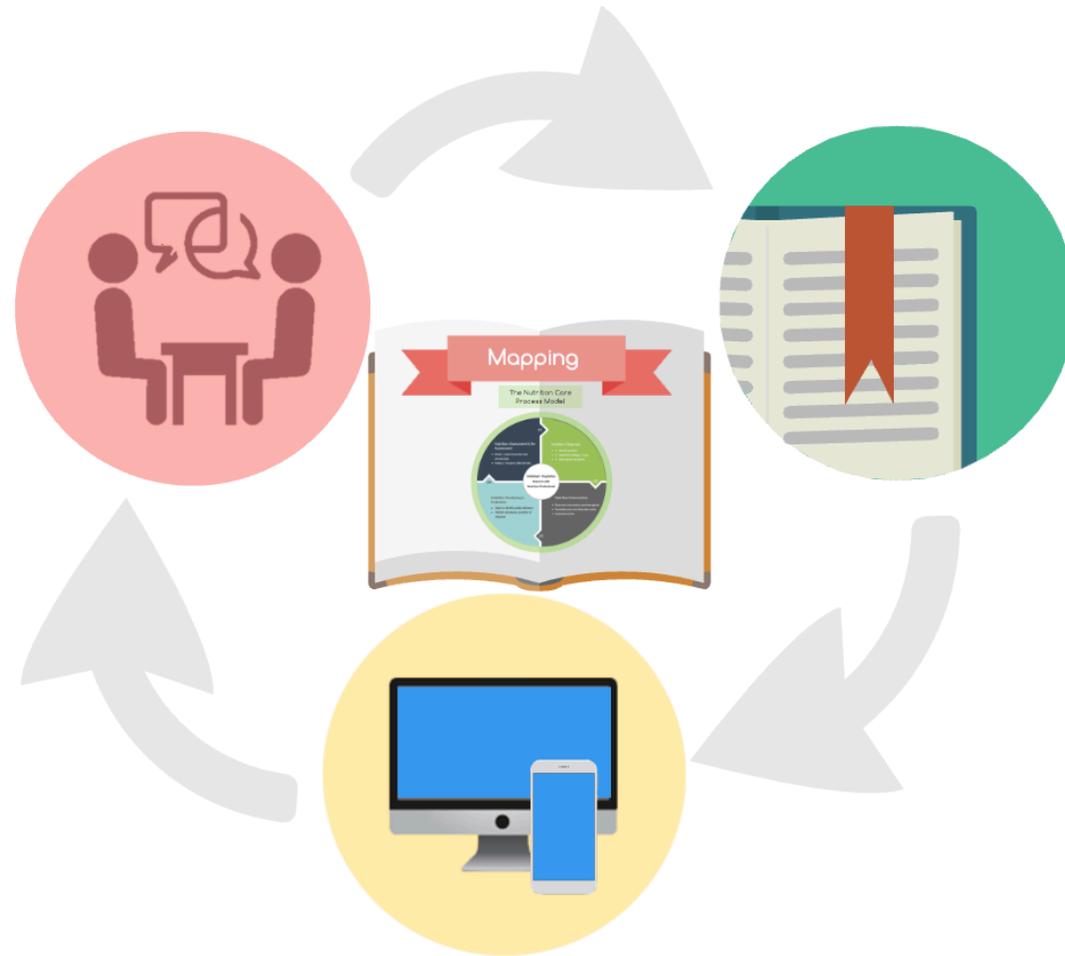
Phase I: Identification of tasks and functions integrated into the platform

A task analysis through interviews with nutritionists from FMG or the private sector to document:

- the nutritional care process,
- experiences,
- the optimal organizational conditions
- expectations on how a telenutrition platform could be designed to meet their needs and those of their clients

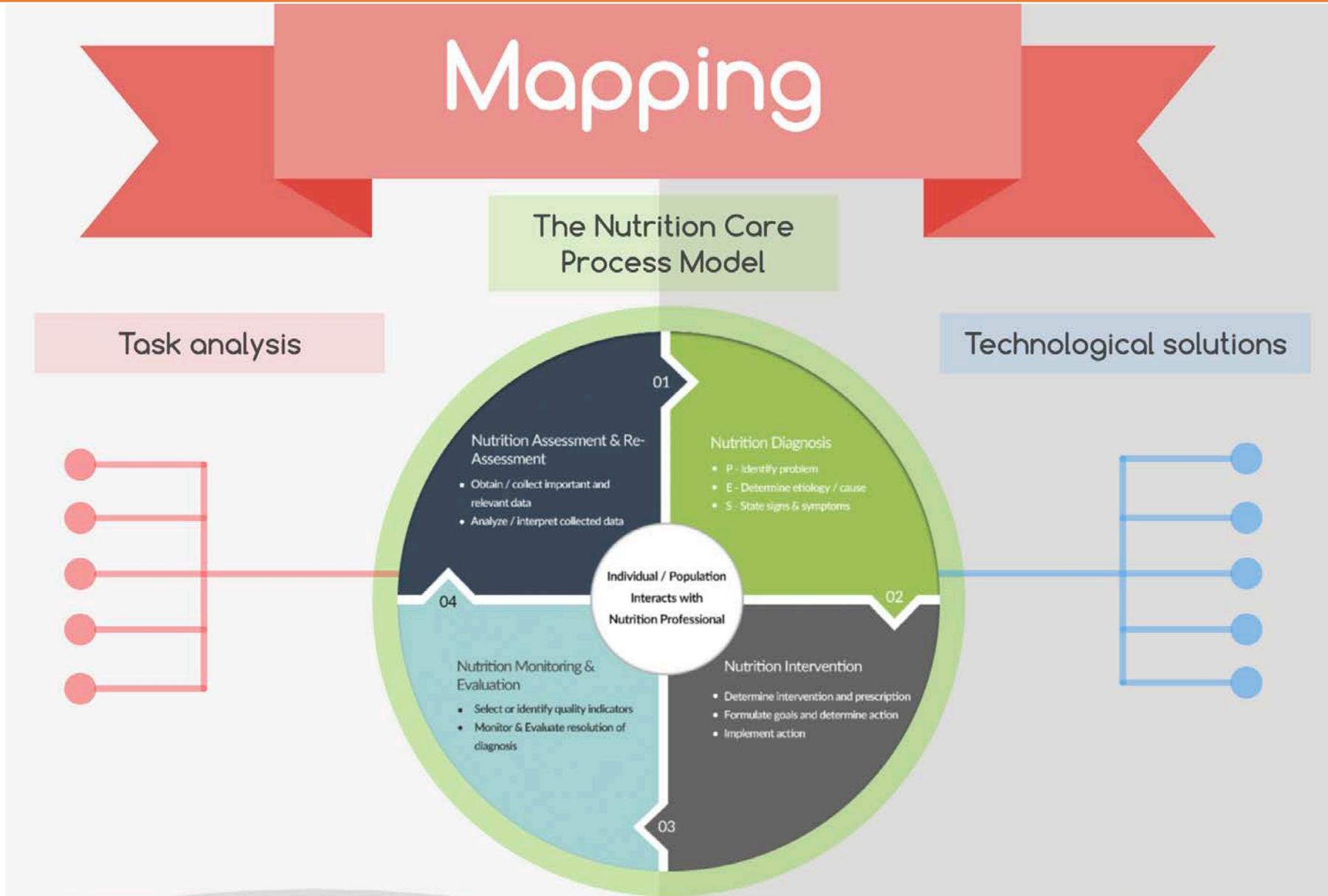
Recruitment :

- 5 nutritionists working in FMGs by network sampling
- 5 nutritionists working in private practice and offering a tele-consultation service, after examining their websites via the Google search engine



Scoping review of telenutrition interventions for those living with chronic diseases and the components of these interventions

Review of the design and content of various mobile and web health applications. The functionalities considered useful identified in the existing systems could also be integrated into the design process.



Methodology

Phase 2: Co-design and development of the prototype

Nutritionists

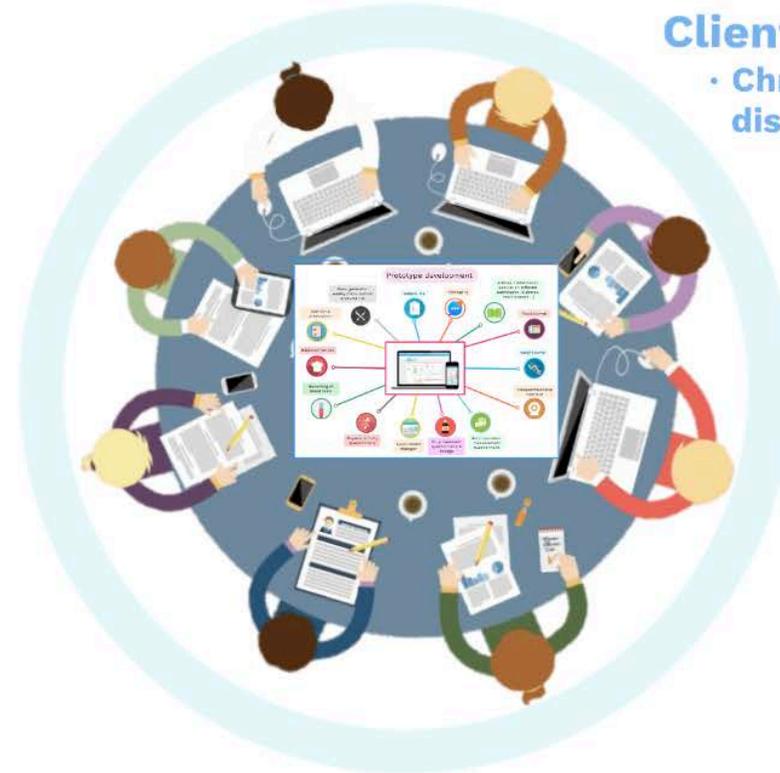
- GMF
- Private



A group of 5 nutritionists with experience in tele-nutrition and working in a private clinic and a group of 5 nutritionists with a practice in GMF in the Montreal region

Clients

- Chronic disease



Recruitment by partner nutritionists in GMFs, reasonable sampling with maximum variation (n = 8)

Iterative development of platform content and appearance based on user feedback

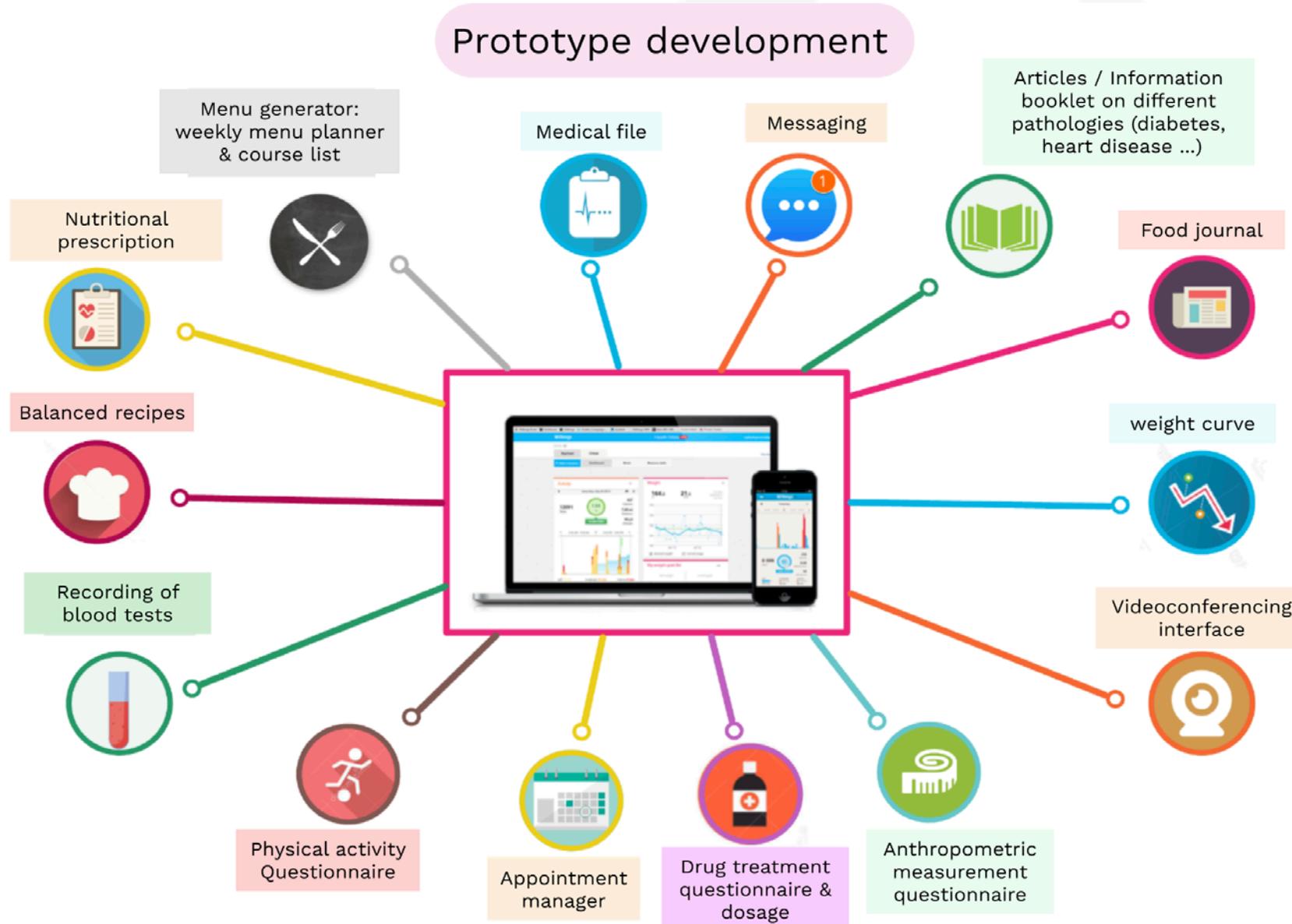
Workshop 1: Planning of the allocation of tasks between the platform and the users from the mapping of the functionalities developed in phase 1. The objective is to explore the priorities in terms of user needs and the possible technical and environmental constraints in use.

Workshop 2: Presentation of the different possibilities of visual frames for each selected feature. Participants will be asked to discuss the different possibilities and come to a consensus.

Workshop 3: A model of the platform and the tools we want to develop will be presented. The opinions and suggestions for improvement of the participants for each component will be collected.

Methodology

Phase 2: Co-design and development of the prototype



Anticipated impact

We aim to study the design requirements to develop a real virtual cabinet that will connect nutritionists and their patients while providing various technological tools that would optimize nutrition education on the front line, monitoring, maintenance at home and promote interprofessional collaboration.



Anticipated impact

Short term :

- 1 Classify and analyze telenutrition devices in order to identify the functionalities that should be integrated into a telenutrition platform for people with chronic disease and identify the different underlying mechanisms to support effectiveness.
- 2 Describe the needs and preferences of practitioners for a telenutrition platform to promote self-management of the condition and identify the optimal proportion of client-clinician technology interaction.
- 3 Contribute to knowledge of technological development for the management of nutritional services and understand how to integrate them in the context of clinical practice in Quebec on the front line.

Anticipated impact

Long-term :

- 1 Develop and validate the content of the telenutrition platform in collaboration with stakeholders through the use of a user-centered design approach
- 2 Implement the platform to help primary care structures expand their range of interprofessional services
- 3 Develop tools to support clinicians in the application of best practices.

Thank you for your attention

Questions ?

