

The use of Patient Reported Outcomes (PROs): a tool to support clinical practice and deliver high value to patients

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CONTEXT AND AIMS

- Oncology requires a multidisciplinary patient-centered approach to lead to a significant improvement in patient journey and consecutively patients' quality of life (QoL).
- The possibility of knowing concerns felt by the patient through QoL survey allows for intervention in real time.
- The goal of this organizational project is to implement the use of PROs in clinical practice and to highlight how this approach can deliver high value to patients (pts).
- Specifically, we aim to demonstrate how the use of PROs can help clinicians make better-informed treatment decisions, improve patient satisfaction, and ultimately, enhance overall health outcomes.
- IPO-Porto is a portuguese oncological public hospital that acknowledges the importance of innovation in cancer treatment.
- We decided to become involved in outcomes measurement because we recognize the importance of patient-centered care and the need to incorporate patients' perspectives into clinical decision-making.
- We believe that the use of PROs is a powerful tool for achieving this goal and can lead to more personalized, effective, and efficient healthcare.

METHODS

- IPO Porto's strategy to implement PROs was divided into four phases:
 - Electronic tool development;
 - Implementation of a patient care office dedicated only to PROs assessment;
 - Training for professionals and patients;
 - Availability of results in the Electronic Patient Record (EPR).
- Patients completed PROs before their medical appointment, in a specific moment of their treatment, using an electronic platform.
- A report to the clinician is automatically generated from QoL assessment and clinicians will be able to accessed the real-time data to inform their clinical decision-making.
- The applied questionnaires are: EORTC/ FACT/ CATQUEST9SF/ EQ-5D/ SF-36.

RESULTS

- The QoL office officially opened in Oct.20, 2020 (Figure 1).
- In this first phase only patients who underwent innovative drugs or specific institutional projects were included.
- It's volunteer the patient participation.



Figure 1. Quality of life office.

- QualiVida is a PROM's platform equipped with internationally validated questionnaires with the aim of registering PROM's electronically (Figure 2).

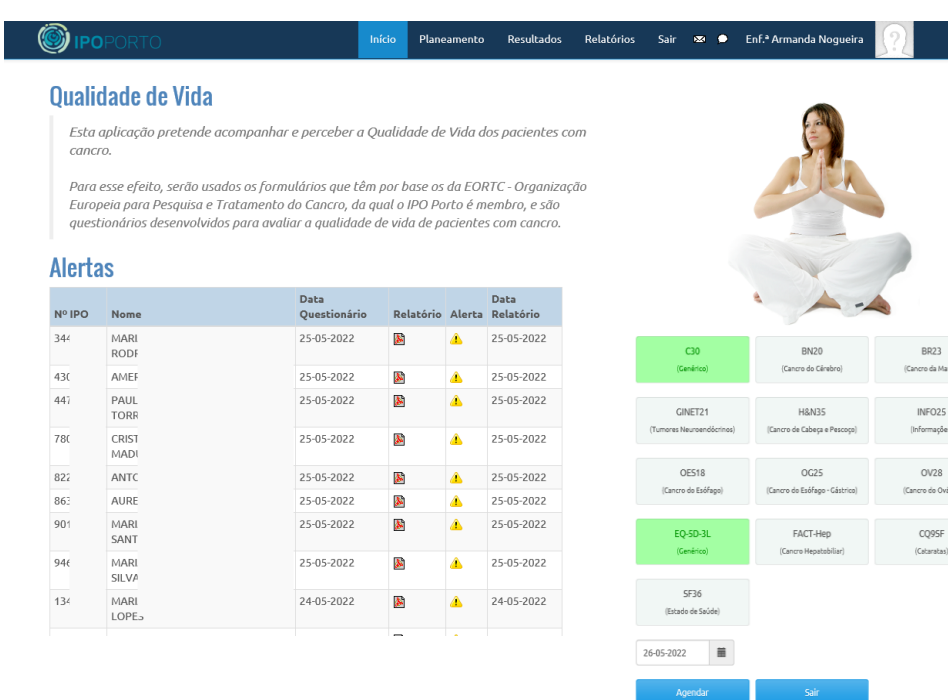


Figure 2. QualiVida software.

RESULTS

- Treatment pathways were mapped with clinicians to define the specific moments of QoL assessment (Figure 3-A).
- An informative flyer (Figure 3-B) was developed to be given to the patient during the teaching appointment before the start of treatment, in order to raise awareness and motivate the patient to the importance of this assessment during the several stages of their treatment.

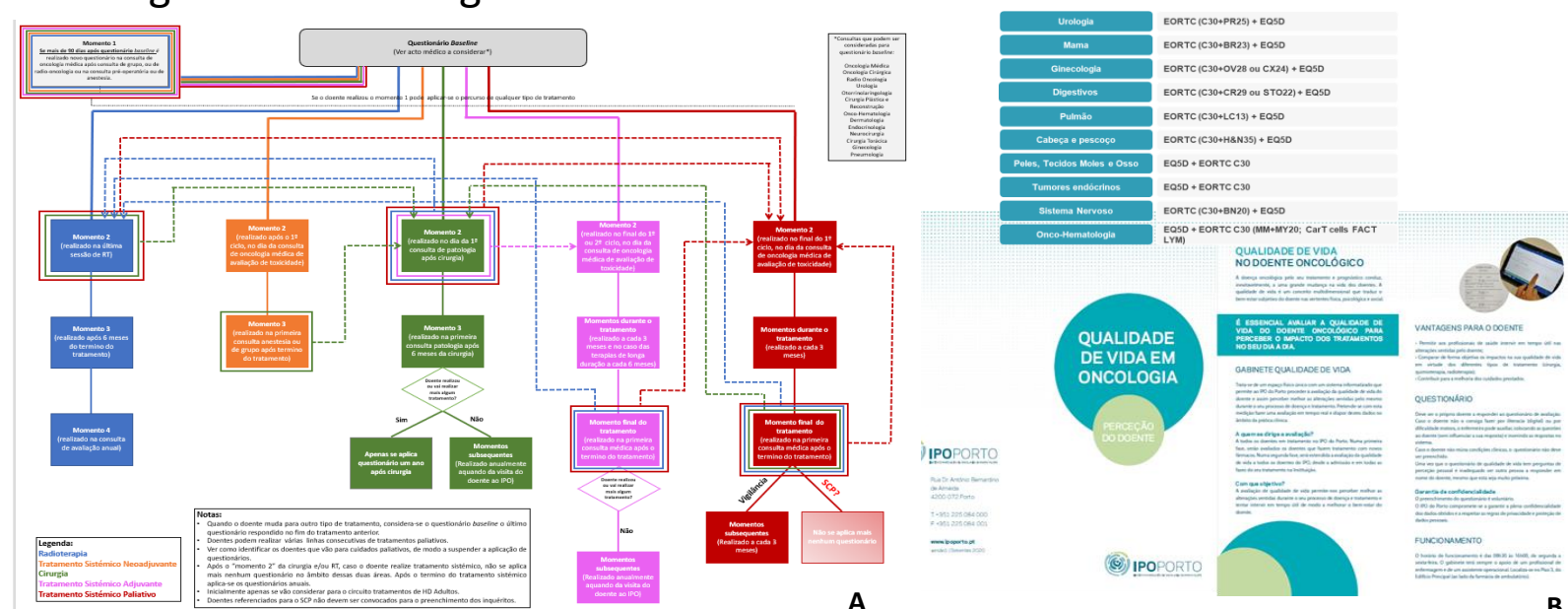


Figure 3. Development materials: A- Treatment pathways map to identify the different moments of QoL assessment, B-Patient communication flyer.

- Since its implementation until december 2022, the IPO Porto integrated around 3200 patients into the QoL circuit, with different pathologies.
- The inclusion of the different pathology clinics in the QoL circuit was made gradually (Figure 4), only for patients doing innovative drugs (or specific projects), which represents around 6% of patients treated in these clinics.

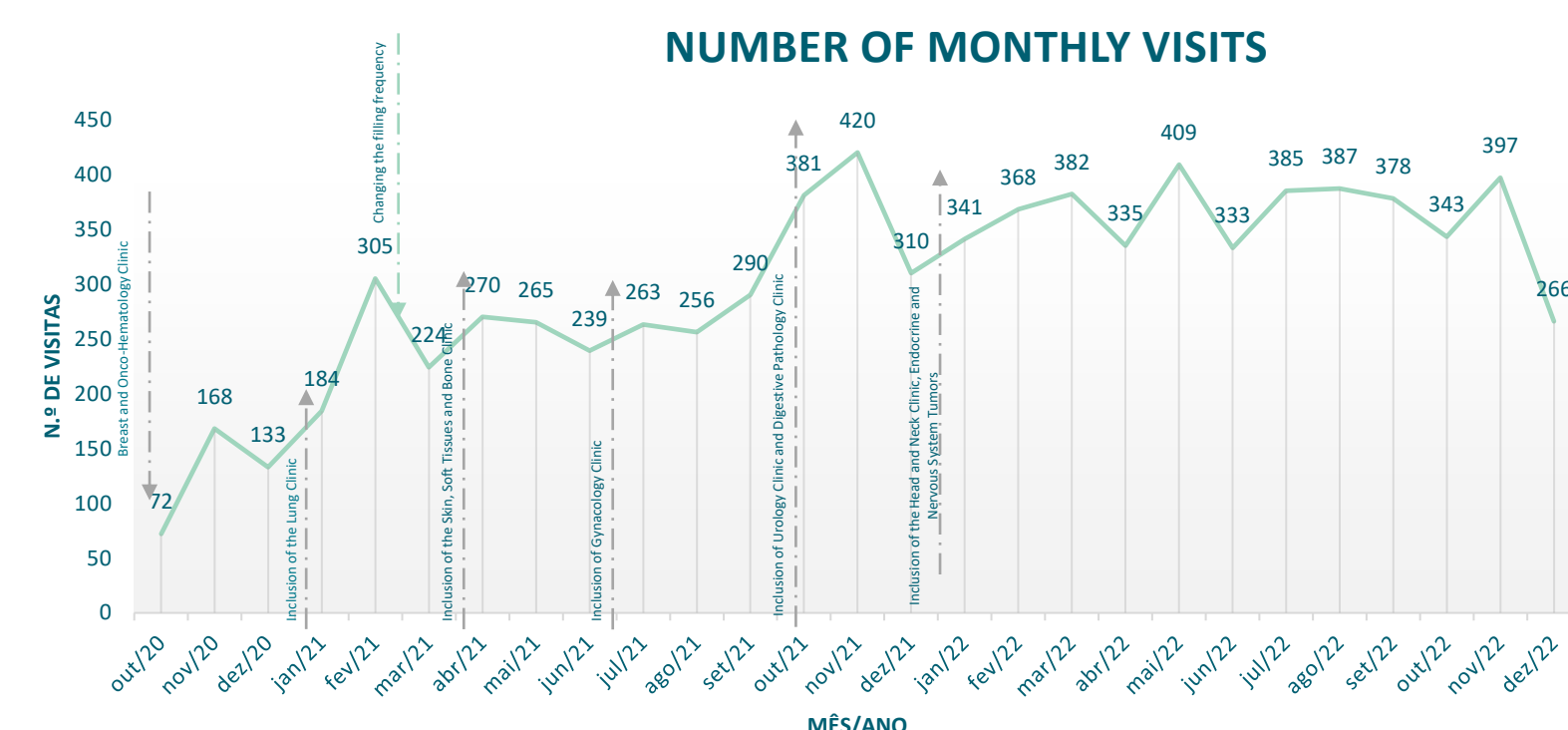


Figure 4. Number of monthly visits to the QoL office.

- The average number of daily visits to the QoL office is approximately of 20 patients.
- Although the QoL circuit was implemented during a pandemic period, the patient adherence rate was approximately 74% (Figure 5)

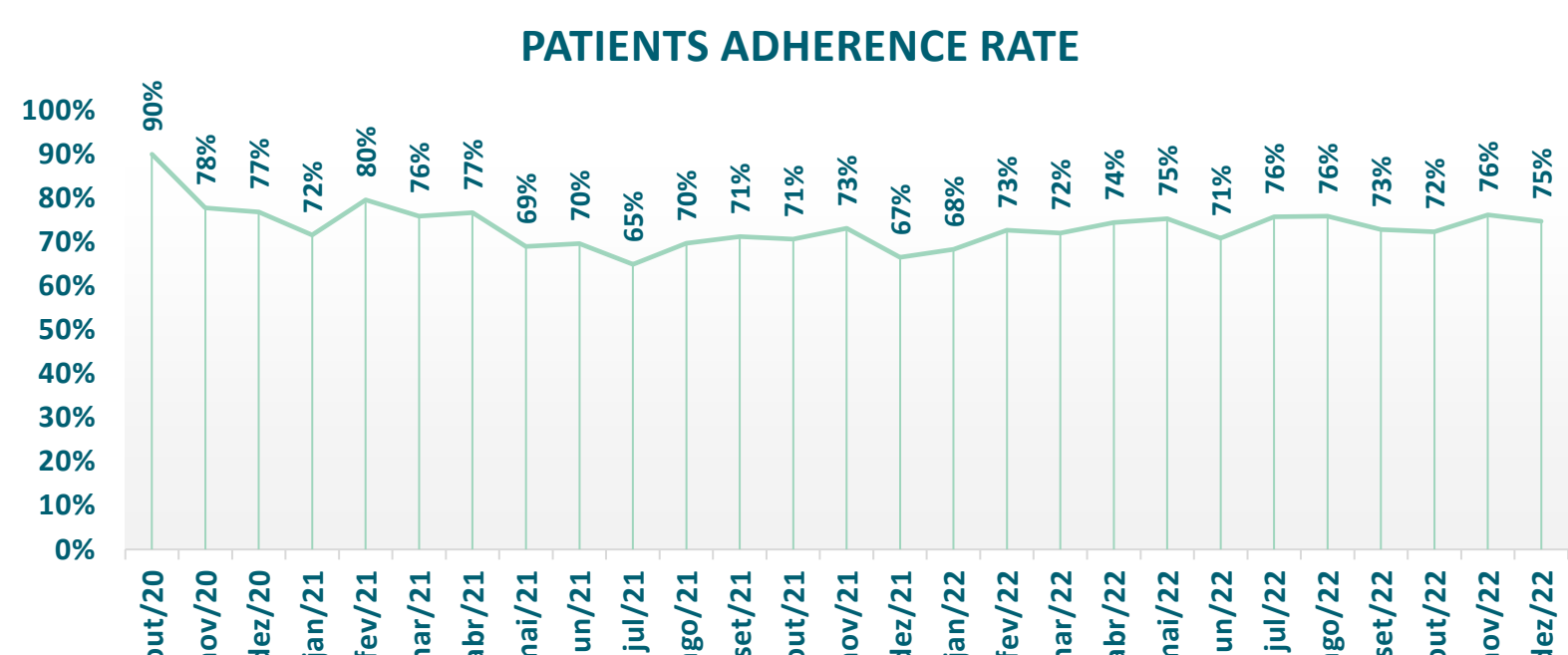


Figure 5. Evolution of the adherence rate.

- A report is automatically generated from QoL assessment, with indication of dimensions with significant improvements and declines with a color scale (Figure 6).
- The results will be integrated into the EPR as support for clinical decisions making available to attending physicians the results of the evaluation, in real-time, enabling QoL-driven therapeutic and monitoring decisions and allowing for improved efficiency and quality in patient management.

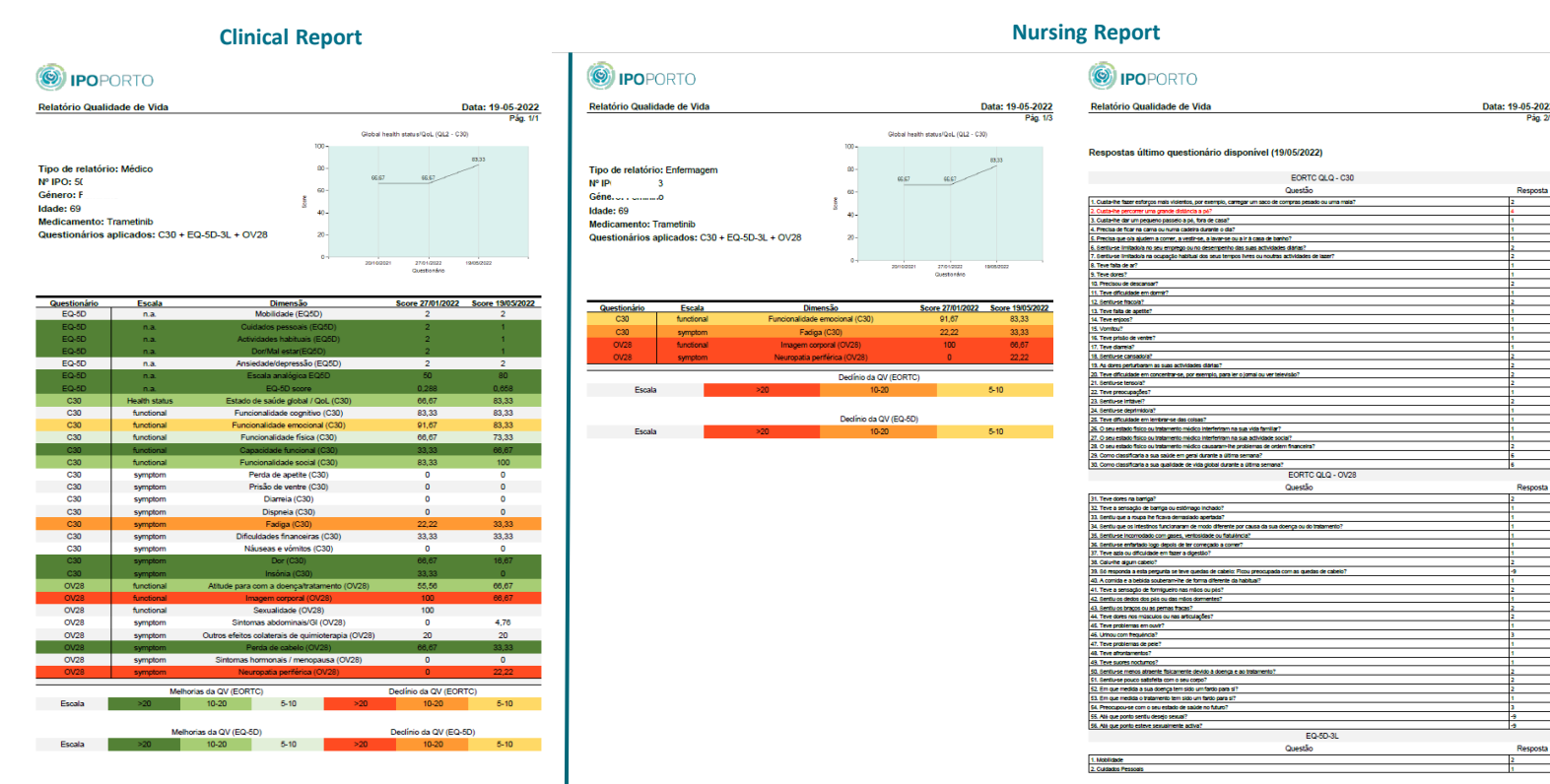


Figure 6. Clinical and nursing reports to integrate at EPR.

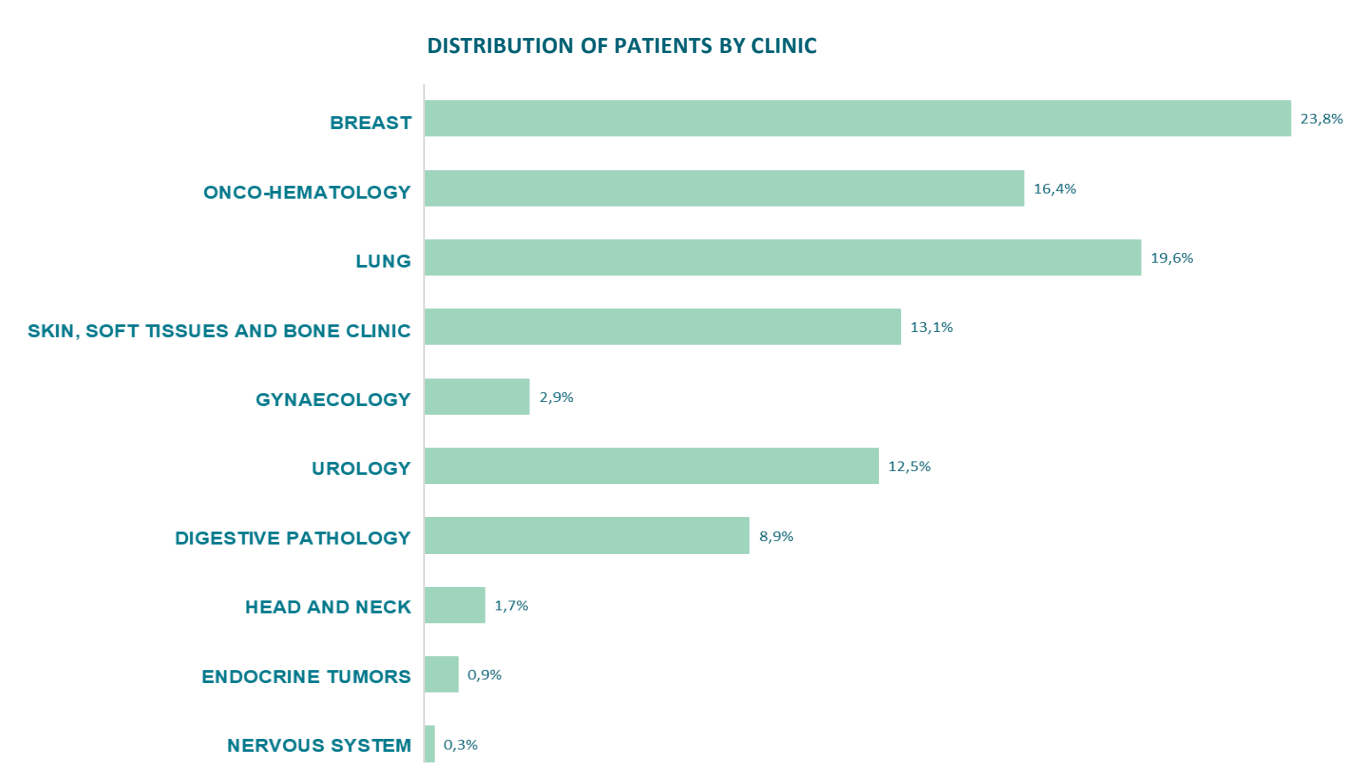


Figure 7. Distribution of patients included in the QoL circuit by clinic.

- Breast, onco-hematology and lung clinics are those with most patients included. These results were expected as these were the first clinics to be included in the circuit (Figure 7).
- Approximately 50,1% of patients included are female and 49,9% are male.
- 76,5% of the patients included are aged between 50-79 years.
- The mockup below (Figure 8) represents the implementation of this project in clinical practice.

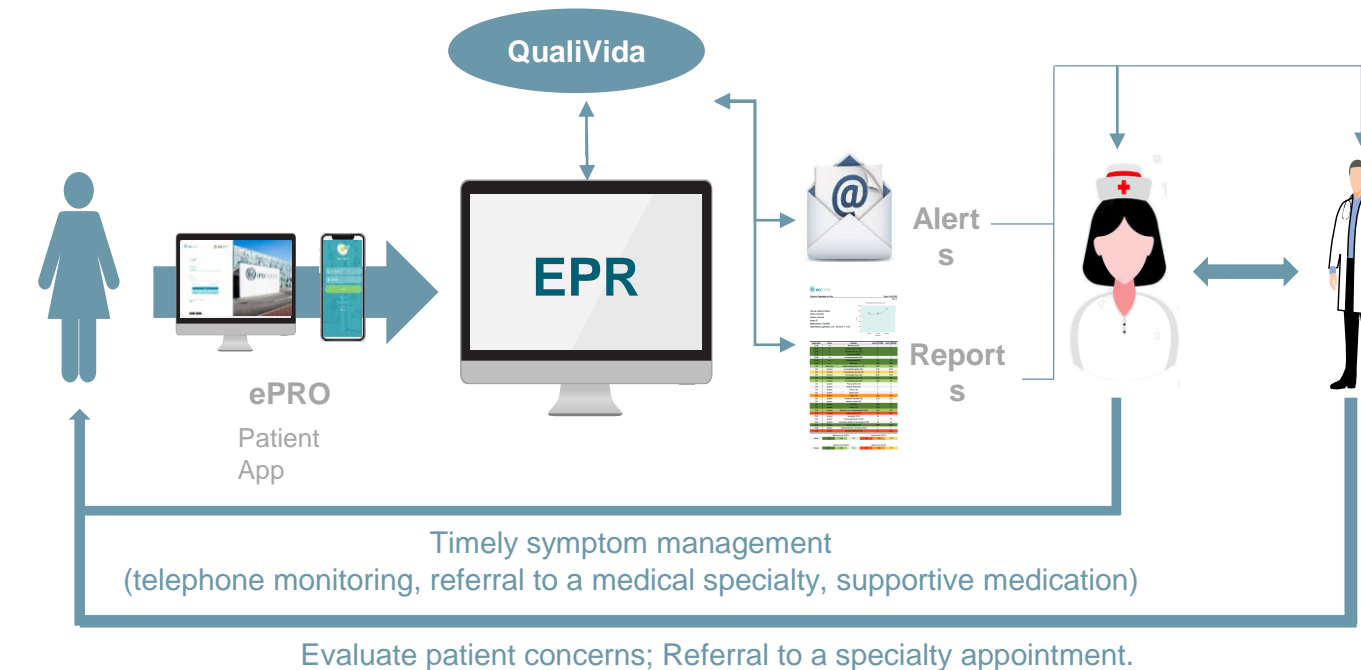


Figure 8. Mockup of QoL circuit.

- To analyze the data provide by pts through QoL questionnaires we conducted paired t-tests and analysis of variance (ANOVA). The statistical analysis of PROs data strongly supports the effectiveness of the intervention in improving patient outcomes.

Exploratory analysis of quality of life of patients using an innovative target therapy for breast cancer

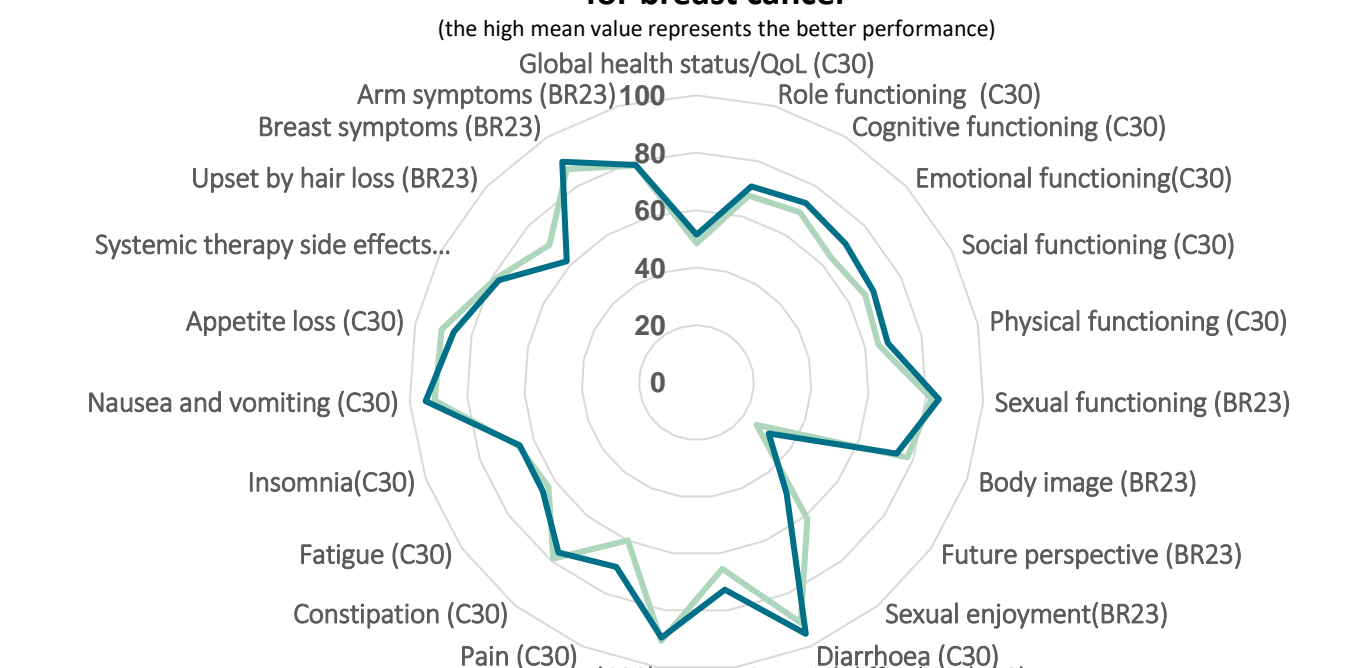


Figure 9-A

- QoL was evaluate for 55% patients. Patients who missing baseline questionnaire were excluded.
- Questionnaires used: EORTC C30 + BR23.
- In general, there was no deterioration in QoL during treatment.
- The mean differences in scores indicated "little" changes, for emotional functioning and future perspective in functional dimensions (6,88 and 5,13 respectively) and for financial difficulties and upset by hair loss in symptom scales (-7,23 and 8,26 respectively). Differences were ≥ 10 points for pain – symptom scale (-10.10) and sexual enjoyment – functional scale (-11.46), indicating "moderate" changes in QoL. However, differences were statistically significant only for pain dimension ($p=0.006$).

Quality of life analysis of peripheral blood stem cell donors

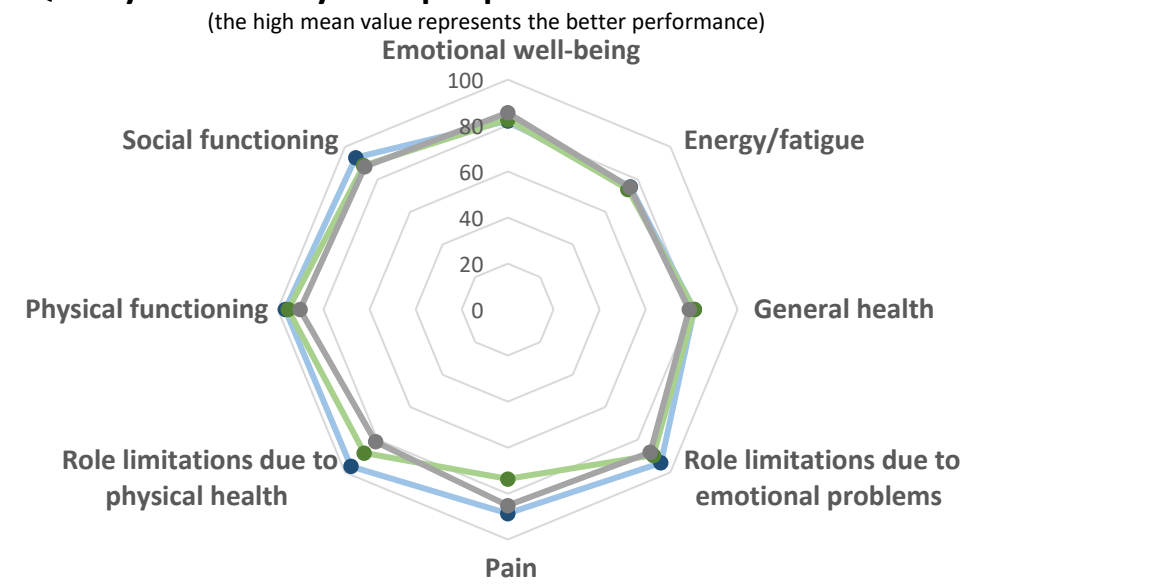


Figure 9-B

- QoL was evaluate for 75% donors. Donors who missing donation questionnaire were excluded.
- Questionnaire used: SF36.
- Donors expressed high scores in all dimensions of HRQoL evaluation.
- However, we performed a T-test to study the differences in scores between the 1st month and the day of donation. The test showed that in Cell Donors there is a decrease in emotional and physical performance and functional loss 1 month after collection. Nevertheless, these differences are expected one month after a procedure of this nature.

Figure 9. Examples of results of QoL assessment

CONCLUSIONS AND LIMITATIONS

- By gathering comprehensive patient-reported data and incorporating it into clinical decision-making, we can improve the quality of care, enhance patient outcomes and increase patient satisfaction. The integration of PROs into clinical practice can deliver significant benefits to both patients and clinicians.
- It provides comprehensive and standardized data directly from pts, enhancing our understanding of the patient's health status and needs. This, improves efficiency and enable more patient-centered care and informed treatment decisions.
- Additionally, we are able to monitor patients' progress over time and evaluate the effectiveness of our interventions.
- However, there are some limitations:
 - we are facing some problems with our IT provider in integrate the reports generated at the PROs plataform into the EPR and to extend the implementation to all IPO Porto patients
 - for now, we still only measure PROs of patients doing innovative drugs or specific projects. We are currently developing the algorithm to extend the evaluation of PROs (automatically) to all patients treated at IPO Porto during their treatment journey. We estimate that this implementation will be completed during 2024.
 - also, it is difficult, at the beginning, to quantify the financial gains, considering the innovative nature of the project.
- With the implementation of PROs, there are also intangible gains that are, perhaps, the most to be expected, namely: directing interventions to areas where patients experience more problems; personalization of treatment and increased centralization of care around the patient; increasing empowerment of people in their health management. However, there are also tangible gains with reduction of indirect and direct costs, such as: reduction of absenteeism; optimized times of appointments; decreasing number of visits to the emergency room and request of imaging exams; decreasing number of readmissions; decreased consumption of medication.
- Our project emphasizes the role of standardized outcomes measures, in promoting the development of best practices and improving patient outcomes globally.