Abstract

Retrospective Analysis of the Real-World Implementation of Remote Patient Monitoring at the European Institute of Oncology: The LUMINIS Study

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Introduction. Remote symptom monitoring can support the timely identification and management of treatment-related symptoms in people with cancer. Although clinical guidance supports its integration into oncology care, evidence concerning large-scale implementation in routine clinical practice remains limited. Following the introduction of the Cureety platform at the European Institute of Oncology in Milan in 2023, the LUMINIS study aimed to describe its real-world implementation over approximately two years.

Methods. A retrospective analysis was conducted of patients enrolled in Cureety at the European Institute of Oncology between 1 July 2023 and 31 March 2025. Cureety is a CE-marked digital medical device through which patients complete cancer- and treatment-specific symptom questionnaires based on the Common Terminology Criteria for Adverse Events framework. The TechCare algorithm assigns one of four clinical classifications: Correct (green), Compromised (yellow), To Monitor (orange), or Critical (red). Orange and red classifications generate alerts requiring action by patients or healthcare professionals. Implementation volume, patient characteristics, reported adverse events, treatment types, and satisfaction were analyzed.

Results. A total of 1,016 patients were enrolled: 682 (67.1%) were women and 334 (32.9%) were men, with a mean age of 62 years. Breast cancer was the most common diagnosis (32.3%), followed by lung (16.2%), prostate (15.9%), gynecological (13.4%), skin (7.7%), and gastrointestinal cancers (5.4%). Treatments included chemotherapy (27.6%), targeted therapy (21.9%), immunotherapy (12.0%), hormonal therapy (6.1%), antibody–drug conjugates (4.1%), and combined treatments (23.7%).

Patients completed 12,691 questionnaires and reported 39,258 adverse events of grade ≥1. Among respondents to the satisfaction questionnaire, 43.1% were very satisfied, 44.4% satisfied, 11.6% moderately satisfied, and 0.9% not satisfied. The number of active patients increased from 91 in the first quarter of 2024 to 669 in the first quarter of 2025.

Discussion. The increase in active users and the high proportion of positive satisfaction ratings suggest that large-scale digital remote symptom monitoring was feasible and acceptable in this oncology setting. These descriptive findings do not establish clinical effectiveness or improvements in patient safety. Further studies should evaluate alert management, healthcare utilization, clinical outcomes, equity of access, and sustained patient engagement.

Keywords: Patient-Reported Outcomes, Digital Health, Patient Empowerment, Remote Patient Monitoring, Self-Management

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