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HEALTHCHAIN STORIES

iMOTION: GIVING VOICE TO EMOTIONS IN PALLIATIVE CARE

THE NEED

In recent years, the number of people with a limited life prognosis with an additional component of pain, suffering and dependency has increased notably. Around 308,475 people need palliative care in Spain (20,011 in Castilla y León), of which 126,640 (8,235 in Castilla y León) will require the intervention of specialised palliative care (PC) teams, although only 40% of them receive it.

Although CYL is a pioneer in offering people with an advanced or terminal illness the support they need so they can continue to live in their chosen home while the disease progresses, this care process is always a challenge in Castilla y León, given its demographic and territorial reality.

The main objective is to detect the emotional state of palliative care patients for the palliative care team professionals (the challenger) to consider it in the patients' personalised intervention plan, mainly at home.



THE HEALTHCHAIN SUPPORT

HealthChain supported Healthcare Organisations in identifying their innovation challenges and selecting companies to address them. They worked closely as an interregional team to co-create, test, and validate a solution aligned with real clinical workflows, patient needs, and organisational constraints. The project provided financial and business support to boost the solution's market-readiness and commercialisation.



THE SOLUTION

iMOTION is a digital assistant that uses Natural Language Processing (NLP) and Digital Signal Processing (DSP) to recognize emotional states through voice recognition.

The solution offers a “human-centered AI” approach using “ethical artificial intelligence by design” to provide non-discriminatory, secure, and robust monitoring for vulnerable patients. It improves psychosocial support by allowing healthcare teams to track emotional evolution between visits.

It identifies speech patterns to discern basic emotions like fear, sadness, and anger from patient conversations. The system includes an alert and reporting feature, allowing palliative care teams to monitor historical emotional data and anticipate risks of emotional distress.



IMPACT

The project has transformed operations for both the healthcare provider and the technology developer.

- Digitalization replaced fragmented, paper-based workflows with an integrated digital system
- Enhanced diagnostic confidence and reduced manual errors through integrated data.
- Shifted to personalised, proactive care model allowing staff to review emotional data prior to patient visits.
- The technology provided a greater sense of agency and transparency for the patient.
- Increased overall patient satisfaction and reducing the need for unnecessary in-person visits.
- Gained critical real-world datasets to refine AI emotion-recognition models.

OUTCOMES

The pilot successfully demonstrated that AI-driven emotional monitoring creates measurable efficiencies in palliative care operations.

- The pilot achieved a 20% reduction in weekly phone calls for appointments because patients' emotional states were known in advance.
- There was a 15% reduction in the duration of phone calls, as healthcare symptoms and emotional distress were anticipated before the call.
- Palliative care professionals reported a high satisfaction level (at least 70/100 points) using the web-based monitoring platform.
- Patients rated the appropriateness of the service and its contribution to their emotional well-being at least 5/10.
- The AI-based model can infer a patient's emotional state across six basic emotions (Happiness, sadness, fear, anger, surprise and disgust) with 85% accuracy using natural conversations.

SUSTAINABILITY

The long-term sustainability of the iMOTION solution is supported by a clear business model and expansion plan.

- A collaboration with another Spanish company will extend the case study by 12 months (until December 2026) to provide validated content for patients and families.
- Multiple organisations in Castilla y León, Madrid, and Murcia have expressed interest in testing the solution in future pilot studies.
- The plan includes securing CE marking, achieving interoperability with Electronic Health Records (EHR) systems, and targeting major EU markets like Germany, France, and Italy.

TESTIMONIALS

“The provision of support by HealthChain has enabled the acceleration of innovation, investment in advanced research and development, and the transformation of a high-impact idea into a tangible, scalable solution that improves clinical workflows and patient outcomes. Beyond the technological outcomes, the collaboration has enhanced our strategic capabilities, broadened our expertise in applied artificial intelligence, and revealed new avenues for sustainable growth, thereby positioning our company as a trusted partner in the field of digital health innovation.”

- ALFONSO BAHILLO. Blue Care emotions

