

Transforming Vaccination Management in La Rioja:

How La Rioja's Public Health department Quadrupled Its Vaccinations in 30 Days Using Voice AI

Executive Summary

La Rioja's public health department, in collaboration with **GSK**, has transformed the management of Herpes Zoster (HZ) and Pneumococcal (PCV) vaccination campaigns through the use of **LOLA**, Tucuvi's clinical voice AI agent.

What was previously a lengthy (active campaigns lasting over 13 months), manual process with limited visibility and partial results has been completely revolutionized with the implementation of LOLA.



30 days

Unprecedented coverage achieved in just one month



4×

More vaccinations vs. the same period the previous year



0h manual calling

Adds the capacity of 15 full-time staff contacting patients for one month

Preliminary results, as of November 25, 2025, demonstrate that a proactive, controlled, and customizable contact model **not only optimizes operational efficiency but also enhances coverage, sustainability, and strategic leadership in public health.**

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The use of artificial intelligence represents not only a technological leap but also a tangible opportunity to improve access and equity in public health, particularly in crucial preventive campaigns such as adult vaccination.

Eva Martínez, Director General of Public Health, Consumer Affairs, and Care

ANALYSIS

Introduction

Vaccination campaigns in La Rioja faced a structural challenge: a citizen contact model characterized by **lengthy timelines, manual processes, and limited information on actual outcomes**.

Until 2024, invitations for vaccination were sent via postal letters to citizens' homes during the month of their birthday.

This model had three critical limitations:

1. *Extended execution time:*

Each cohort required up to 13 months to complete, making it difficult to plan new campaigns or respond to incidents.

2. *Lack of visibility:*

The Health Department had no data on whether letters were received, read, or whether citizens decided to get vaccinated.

3. *High resource consumption:*

Each campaign involved a high administrative burden to print, envelope, and sort approximately 4,900 letters, and it was clear that coverage was low and visibility was limited.

Attempting to increase coverage manually by phone would have required 15 full-time staff calling all cohort citizens, clearly representing a very high use of resources.

SOLUTION

Transformation of Citizen Contact

In August 2025, the Health Department of La Rioja implemented LOLA, Tucuvi's clinical voice AI agent, to transform the management model of Herpes Zoster and Pneumococcal vaccination campaigns.

LOLA is a clinically validated voice AI that conducts autonomous, natural conversations with citizens, collecting accurate information about their vaccination intentions, questions, and current health status.

In addition, LOLA is trained with frequently asked questions regarding both vaccines, enabling it to answer common inquiries in real time, from potential side effects to more general topics, such as what the Pneumococcal and Herpes Zoster vaccines are and how they work, thereby resolving citizens' doubts promptly.

All collected information is presented in a structured, real-time format on the Health Department's management dashboard, enabling immediate, data-driven decision-making.



Contact and Recontact Strategy

The project began on August 22 with **gradual calls, adjusting messages, segmenting citizens** based on their vaccination intentions, and optimizing contact times.

Citizens are classified into several segments according to their responses, enabling future decisions based on their answers:

- Group 1: Accepts vaccination
- Group 2: Refuses vaccination
- Group 3: Unsure but agrees to receive SMS with more information
- Group 4: Unsure and declines to receive SMS
- Group 5: Vaccination already administered (minority)

Thanks to this segmentation, LOLA not only records each citizen's initial response but also automatically **prioritizes follow-ups, adapts messages to their situation, and optimizes contact resources**. This approach allows turning hesitant individuals into active participants and ensures that every interaction achieves maximum impact.

Recontact Strategy

LOLA has also demonstrated the ability to engage individuals who did not respond to traditional campaigns:

- *Recapture in the 1959 cohort*: Among citizens born in 1959, previously contacted over the prior 13 months via traditional methods but who had not been vaccinated.
- *General recontact*: Active follow-up with all citizens, regardless of cohort, to maximize reach through actions tailored to their interaction with LOLA.

Recontact maximizes engagement with specific actions based on the first interaction:

- Follow-up calls to citizens who did not answer the phone initially
- SMS with additional information to citizens in Group 3
- SMS to those who did not respond or hung up, explaining the purpose of the call

Results and Conclusions (As of November 25, 2025)

Results

Preliminary results demonstrate the direct impact of this approach on vaccination coverage, operational efficiency, and campaign effectiveness, showing how a predictive and conversational model can make a difference in record time.

1. Total and Active Contact in 30 Days

In just one month, LOLA **contacted the target population of 6,347 citizens from the 1959 and 1960 cohorts**, effectively reaching 85.21% of them. During these interactions, vaccination intentions were recorded, doubts or refusals were identified, and follow-ups were conducted through personalized tracking and intelligent recontact strategies.

While the traditional model required 13 months to partially cover a cohort, LOLA consolidated the operational capacity of the Health Department in just 30 days, generating real-time actionable insights.

2. Four Times More Effective Vaccinations

The true value of the system lies not only in reaching more citizens but in turning contact into action. Thanks to its ability to understand each individual's intention, identify reasons for refusal, and apply recontact strategies, **four times more effective vaccinations were achieved compared to the same period the previous year**, without direct human intervention.

Since the project's launch, **La Rioja has recorded a 30% increase in vaccination coverage within the 1960 cohort**, reaching levels never before achieved among adults in this age group.

Specifically:

- Herpes Zoster Vaccine (1960):
 - Until August: 6% (281 doses administered)
 - From August 21: 38.34% (1,678 doses administered)
- Pneumococcal Vaccine (1960):
 - Until August: 5.25% (230 doses administered)
 - From August 21: 35.69% (1,586 doses administered)

3. Recovery of Previously Unvaccinated Population

In the 1959 cohort, already contacted the previous year via the traditional model, **LOLA enabled recontacting and converting hundreds of citizens who had not accepted vaccination during the previous 13 months**, achieving coverage increases of **+14.65%** for Herpes Zoster and **+12.99%** for Pneumococcal.

This demonstrates the system's ability to turn hesitant individuals into active participants, far exceeding the limits of the traditional model.

4. Understanding Reasons for Refusal

The traditional model, based on sending letters, **did not allow insight** into whether citizens had received the message, decided to vaccinate on their own, or refused the vaccine - let alone the reasons behind those decisions.

As a result, a large portion of the unvaccinated population **remained invisible to the Health Department**, making it impossible to identify the actual reasons for refusal and act to improve coverage.

Since implementing LOLA, it is now possible to understand **why more than 50% of initially unvaccinated citizens change their decision**. This information radically transforms the strategy, enabling the design of targeted interventions, adapted messaging, and intelligent recontact, increasing the likelihood of conversion and reducing coverage gaps.

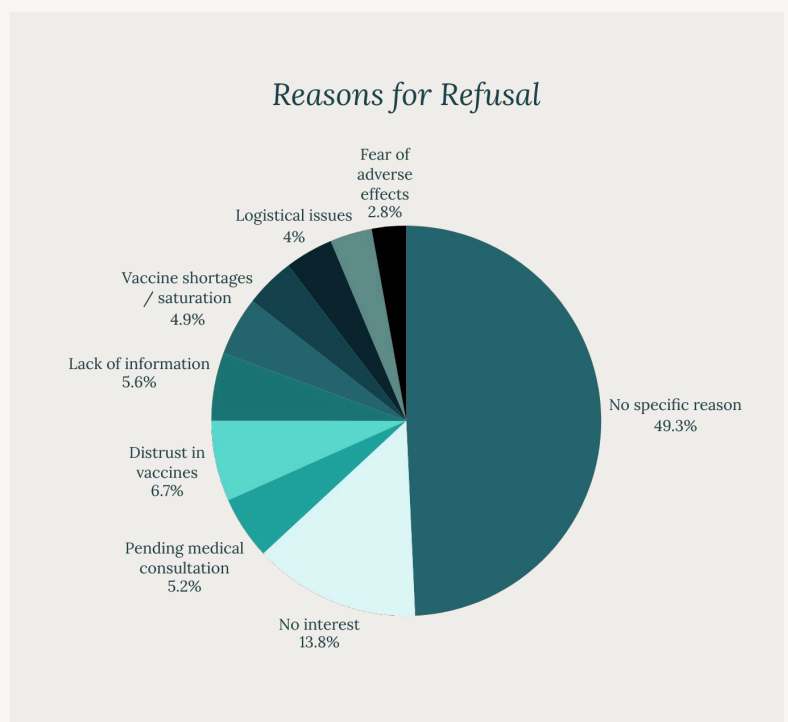


Figure 1. Reasons for Citizen Refusal (Results as of November 25, 2025)

5. Territorial Visibility and Data-Driven Planning

For the first time, the Health Department obtained a **granular view by basic health zone**, allowing identification of differences in vaccination acceptance or refusal across areas. This traceability provides key information for resource planning, prioritization of interventions, and impact evaluation, ensuring that each campaign is effective, measurable, and adapted to territorial realities.

6. Total Human Resource Optimization

Had the campaign been carried out using the traditional (manual) method, it would have required **a team of 15 full-time staff dedicated exclusively to contacting citizens** for one month. With the implementation of voice AI, staff were freed from administrative tasks, allowing them to focus on higher-value healthcare activities and strategic planning.

Sustainable Impact of the Campaign

The results of this campaign are not only significant from a health perspective but also demonstrate a tangible and measurable environmental impact:

- *Carbon footprint:* 84.7 kg CO₂ in total (13.3 g per patient), equivalent to driving 450 km in a gasoline car.
- *Water consumption:* 38,870 liters (6.12 L per patient), enough to drink 2 liters daily for 53 years.
- *Energy consumption:* 194 kWh (0.031 kWh per patient), comparable to driving from Madrid to Paris in an electric car.
- *Paper and envelope savings:* 4,000 sheets and envelopes avoided, approximately 40 kg of material, reducing pressure on forests and natural resources. Producing these sheets would have required roughly 32,000 liters of water and 66.7 kWh of energy.

And this impact corresponds only to two cohorts of the campaign.

If La Rioja were to extrapolate this model to all vaccination campaigns and institutional communications, resource savings and emission reductions would increase exponentially, positioning the region as a leader in innovation, efficiency, and sustainability in public health.

In other words, LOLA not only improves operational efficiency and health outcomes but also turns each campaign into a strategic action in environmental responsibility, demonstrating how advanced clinical technology can generate positive impact beyond health.