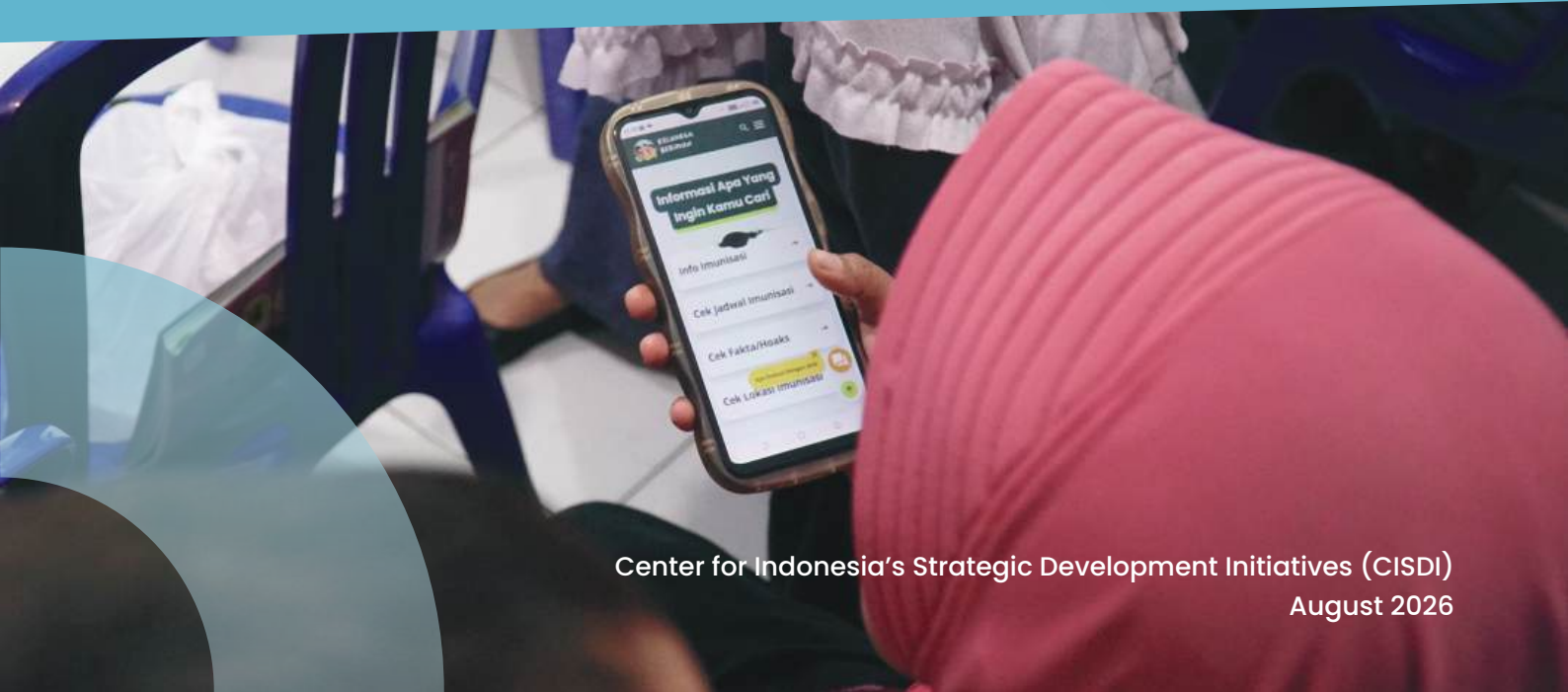




From Hesitation to Action

Evidence and Learning from
the Keluarga Berimun Immunization
Demand-Generation Programme



What Did It Take to Move Families from Hesitant to Vaccinated, and Did It Work?

This executive summary presents the full story of Keluarga Berimun, a demand-generation programme designed to reach caregivers of children under five through the channels they actually use, from WhatsApp groups and social media to Posyandu visits and community health workers. Funded by Gavi, the Vaccine Alliance and Advancing Health Online (AHO) through the VaxSocial Program, CISDI aims to address distrust in immunization.

When immunization coverage stalls, the barriers are rarely just logistical. Caregivers miss schedules because they didn't get a reminder, a relative raised doubts or they disengage because no one followed up. The programme was built to interrupt those patterns, with consistent messaging online, reinforced by trusted voices offline.

This executive summary documents what was designed, what was actually delivered, how the online and offline components interacted in practice, and what the results looked like across the implementation period. It draws out the programme lessons that matter for anyone designing the next iteration, and directs what worked well enough to scale.



Below are some of the partners we worked with:

- **Government:** Ministry of Health & District Health Office of Depok City and Bekasi Regency
- **Healthcare Facilities:** 12 Puskesmas & 38 Posyandu across Depok City and Bekasi Regency
- **Local Actors:** >300 community health workers and 50 family welfare movement organizations (PKK) members
- **Civil Society Organization:** MAFINDO (hoax search bar on the Keluarga Berimun website), Yayasan Orangtua Peduli (pediatrician expertise for daily WhatsApp Support Group Q&A), Fatayat NU (religious organization for content production)
- **Influencers:** >50 KOLs
- **Online Media Publishers:** ~20 media outlets
- **Digital Marketing Agencies and Hotline Chatbot Platform:** 5 agencies (for digital ads, influencer management, programmatic ads, social listening tools, and omnichannel platform)
- **Research & BCC Institute:** Lembaga Penyelidikan Ekonomi dan Masyarakat (LPEM) Faculty of Economics and Business Universitas Indonesia & Advislab

How Did We Show Up and Did People Stay?

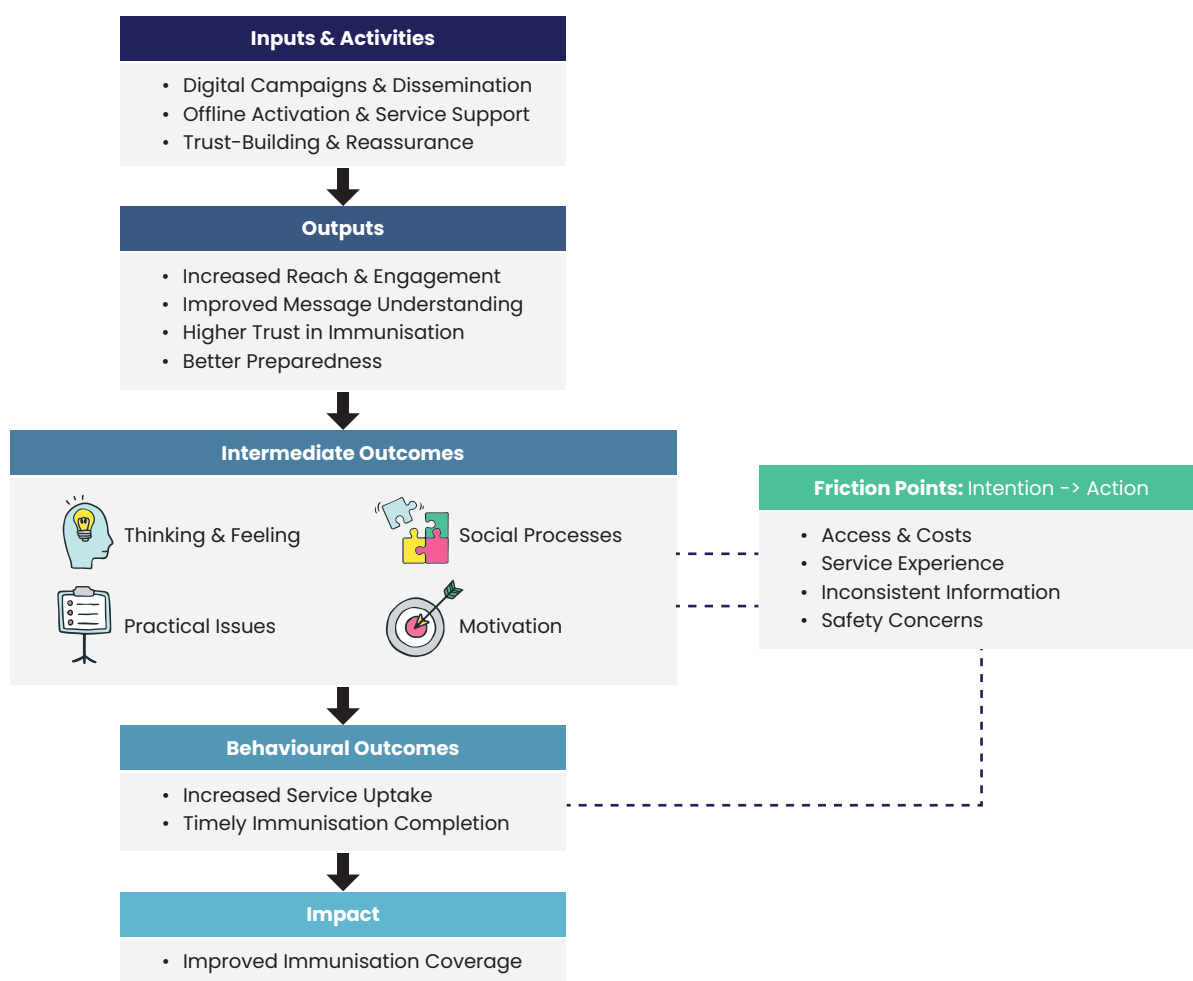
To affect behaviour change Keluarga Berimun set out to deliver repeated, well-timed contact across the channels people already trust. The programme ran twelve months of structured communication across three phases, each mapped to a different stage of caregiver decision making, aligned with the WHO Behavioural and Social Drivers (BeSD) framework.

Keluarga Berimun's Theory of Change was designed around the WHO Behavioural and Social Drivers framework because caregivers do not delay immunization for one reason alone. Some barriers are emotional, such as fear of side effects, misinformation, and low confidence in vaccine safety. Others are social, such as hesitation from husbands, grandparents, neighbours, or religious/community networks. Some are motivational, where caregivers agree that immunization is important but do not yet feel urgency to act. Others are practical, including uncertainty about schedules, where to go, what to do after AEFI, vaccine stock availability, queues, and service hours.

The programme therefore addressed four linked problems. **Thinking and feeling** interventions worked to reduce fear and build confidence through credible, empathetic, evidence-based messaging. **Social process** interventions worked to strengthen family and community support by using trusted messengers, WhatsApp groups, Posyandu, Puskesmas, and CHWs. **Motivation** interventions worked to shift caregivers from passive agreement to active intention by framing immunization as parental love and investment in a child's future. **Practical issues** interventions worked to help caregivers translate intention into action through reminders, navigation support, Hotline consultation, WSG discussion, and referral to services.

This is why the ToC includes friction points between intention and action. Even when caregivers trust immunization and intend to vaccinate, completion can still be interrupted by service access, costs, waiting times, stock-outs, inconsistent information, or unresolved safety concerns. The programme's contribution is therefore strongest when digital communication, trusted offline actors, and service-linked support work together.

BeSD-informed Theory of Change (ToC) for Keluarga Berimun, Including Key Friction Points Observed During Implementation



What Each BeSD Domain Was Designed to Solve

BeSD Domain	Barrier Addressed	Programme Response
Thinking & Feeling	Fear of side effects, misinformation, low confidence in vaccine safety, uncertainty about benefits	Credible content, myth-busting, expert explanation, religious and health worker voices, empathetic reassurance
Social Process	Influence from husbands, grandparents, neighbours, religious/community norms, lack of household support	Family-oriented messaging, trusted messengers, CHWs, Posyandu, Puskesmas referrals, WhatsApp Support Group peer discussion

BeSD Domain	Barrier Addressed	Programme Response
Motivation	Low urgency, passive agreement, delayed decision-making, competing household priorities	Parental love framing, future-oriented messages, reminders, calls-to-action to complete the schedule
Practical Issues	Schedule confusion, uncertainty about where to go, AEFI worries, service navigation, stock-outs, waiting time, unclear service hours	WhatsApp Hotline, WhatsApp Support Group, website tools, CHW/Puskesmas referrals, service-linked support, feedback to health system actors

The first phase addressed doubt, built trust, and shifted how caregivers felt about immunization before asking them to do anything. The second phase moved outward to the social environment, recognising that in most Indonesian households, a mother does not decide alone. Grandmothers, husbands, and neighbours all play a role, and the messaging reflected that.

The third phase operated at the level of parental aspiration. The programme reframed immunization as an expression of investment in a child's future wellbeing, moving away from obligation-based messaging that reinforced compliance. Rather than reinforcing compliance through obligation-based messaging, the programme reframed immunization as an expression of investment in a child's future wellbeing. This shift draws on well-established behaviour change theory that intrinsic motivation, rooted in values and identity, produces more durable behaviour than extrinsic prompts. A caregiver who vaccinates because she sees herself as someone who protects her child's



The programme's design and its evaluation followed the same evidence-first logic. Formative research conducted across Depok and Bekasi (interviews with health workers, community leaders, and caregivers) identified four distinct caregiver segments and their specific barriers to immunization. These findings shaped the campaign's three-phase structure (trust -> social support -> motivation), aligned to the WHO Behavioural and Social Drivers (BeSD) framework, and continued to inform how progress was measured throughout implementation:

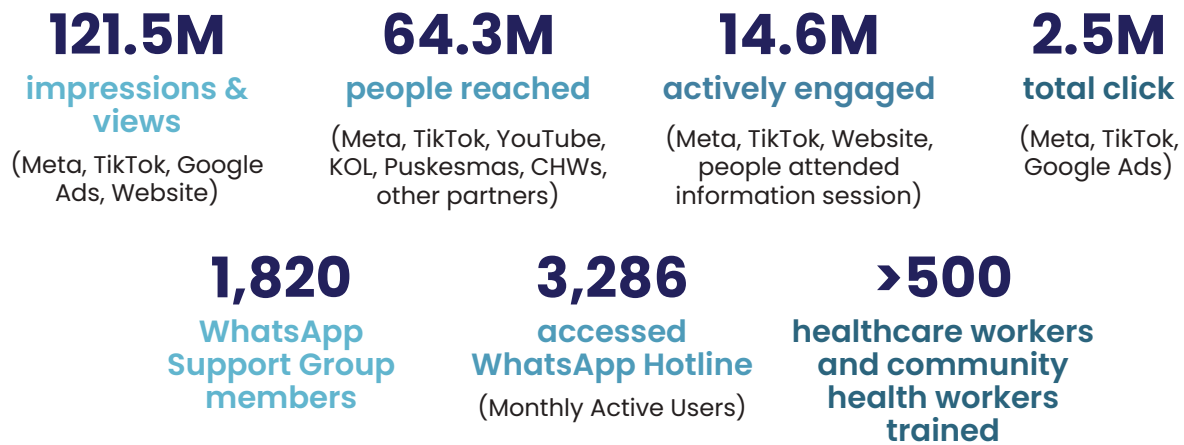
- **Continuous monitoring & digital analytics:** Tracked reach, engagement, and channel performance in real time across the 12-month period, allowing content and channel adjustments along the way.
- **MEL survey:** A mixed-mode (online and offline) instrument measuring exposure, engagement, and behavioural shifts such as knowledge, confidence, and intention.
- **Impact evaluation (midline & endline):** A quasi-experimental design comparing intervention areas (Depok and Bekasi) against comparable control areas (Kendal and Semarang), combining caregiver surveys with government immunization records (ASIK).
- **Implementation research:** Qualitative interviews and process tracing with caregivers and health workers to understand why and how the campaign influenced immunization decisions, not just whether it did.
- **Cost-effectiveness analysis:** Programme-level value-for-money estimated relative to comparator areas, using a quasi-experimental design (PSM-DiD/TWFE).
- **Channel cost-efficiency:** Cost per reach, engagement, and conversion calculated directly from platform ad spend data, used to compare media performance across channels.

Findings across all sources were triangulated and interpreted with a contribution-oriented lens, since many factors beyond any single programme shape a family's immunization decisions.

Over twelve months, Keluarga Berimun's content on Meta, TikTok, Google Ads, and the website was seen **121.5 million times** and **reached 64.3 million people**, showing up in the middle of people's everyday scroll. About **14.6 million engaged meaningfully**, and around **2.5 million clicked through for more with Click Through Rate (CTR) 3.88%**. For context, the click-through rate for the healthcare industry typically ranges between 1.9% and 2.6%, suggesting that Keluarga Berimun's CTR of 3.88% outperformed the benchmark¹.

But digital reach only tells part of the story. The quality of engagement matters as much as the volume, as shown through engagement from the WhatsApp Support Group and Hotline. **1,820 caregivers** joined the Support Group to ask questions, push back, and work through their concerns in real time. **3,286 caregivers** contacted the Hotline every month and 304 users accessed the service more than once. These were parents actively seeking answers, which signals genuine intent. More than **500 healthcare and community health workers** completed training across the intervention areas, ensuring that when caregivers arrived at a Puskesmas or Posyandu, the human interaction they encountered reinforced everything the digital channels had built.

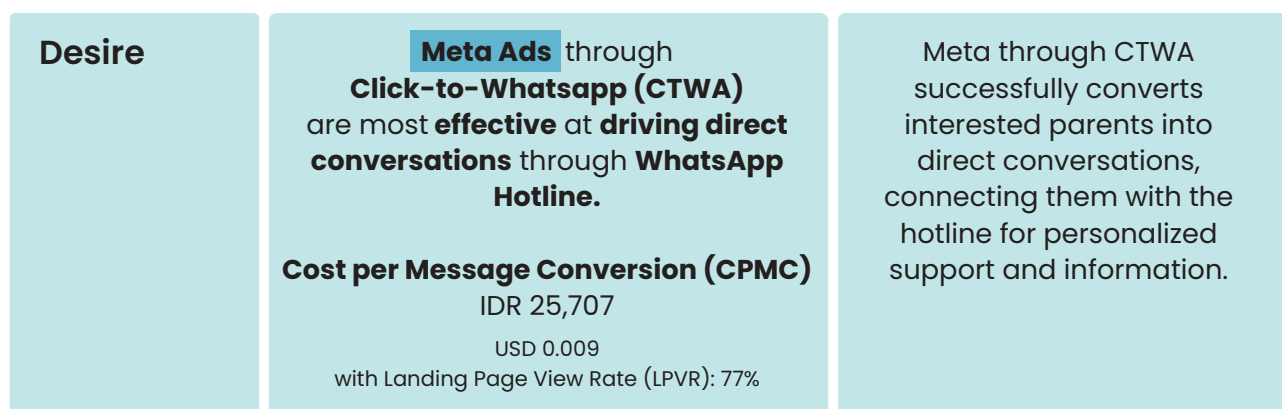
¹ Reach Effect (2026, April 24). Click through rate benchmarks by industry.
<https://reacheffect.com/blog/click-through-rate-benchmarks-by-industry/>.



(Source: Digital Analytics)

Each social media platform plays a different role in reaching and engaging the audience. **Meta Ads (Instagram and Facebook)** lead on **awareness at the lowest cost**, **influencers** extend **reach to new and unique audiences**, **TikTok Ads** take over by **driving the most clicks through to the website**. When it comes to **turning interest into action**, **Meta Ads with Click-to-WhatsApp (CTWA)** stands out as the strongest converter, connecting interested parents directly to the WhatsApp Hotline for personalised support.

Awareness	Meta Ads are the most effective and cost-efficient for reaching a wide audience Cost per Mille (CPM) IDR 2,719 USD 0.16 with 70,648,928 impressions	Meta is the cheapest way to get your content seen by a large number of people.
	Influencers are the most cost-efficient at reaching more unique people Cost per Reach (CPR) IDR 122 USD 0.007 with 64,292,997 reach	Influencers are the most efficient at reaching new and different people.
Interest	TikTok Ads are the most effective and cost-efficient at driving clicks and traffic to the Keluarga Berimun website Cost per Landing Page View (CPLPV) IDR 154 USD 0.009 with Landing Page View Rate (LPVR): 77%	TikTok is better at getting people curious enough to click and learn more on the website.



The program's social media outreach reached **over 64 million people** at **IDR 26,00 (USD 0.0016) per person**. This figure highlights the program's strategic value as a scalable, low-cost awareness platform, one with considerable potential to bridge the gap between public outreach and measurable immunization coverage improvements.



1 USD = IDR 16,500*

*) USD conversion uses the State Budget (APBN) exchange rate assumption.

What Did Twelve Months of Testing Teach Us?

Social Media Channel Fit Matters: One Size Does Not Fit All

Keluarga Berimun's 14.6 million active engagement came from a content strategy and twelve months of iterative testing.

Across nearly all platforms, the content that drove the strongest results has certain characteristic:

- ◆ **Family conversation formats**, such as dialogues between husband and wife, grandparent and parent, or father and community health worker, consistently outperformed any other approaches across nearly all platforms. Problem-led hooks that surfaced a real caregiver concern in the first three seconds, without mentioning immunization upfront, consistently earned more attention than hooks that led with generic awareness messaging.
- ◆ **Emotional storytelling** that follows **a transformation arc (from doubt to confidence, or from panic to calm)** resonated deeply with audiences.
- ◆ **Content addressing specific parental concerns**, such as fever after vaccination, immunization certificates, and vaccination schedules, consistently attracted high attention.

The platforms diverged, however, in what those principles needed to look like in practice.

∞ Meta

- ✓ On Meta, content that **led with a real caregiver concern, without signalling the health agenda** in the opening seconds, consistently outperformed promotional approaches across every campaign objective, whether the goal was awareness, engagement, or driving traffic to the website.
- ✓ Within that framing principle, format choices produced measurable differences by objective. **Direct-to-camera video dominated awareness** performance. For **engagement and interaction, video outperformed** carousel overall, though when the same message was tested across both formats, **carousel reached new audiences more efficiently** while **video drove stronger interaction with existing ones**, though results need further testing.
- ✓ For **website traffic**, carousel held a slight edge, and Meta delivered that result at 43% lower cost than TikTok for the same outcome. For content designed to move caregivers into the **WhatsApp ecosystem, short videos of around thirty seconds featuring real people, opening with a problem** and moving immediately to a **solution**, worked best. At that stage of the journey, format choice mattered less than content quality.



- ✗ **Overly promotional hooks** and **studio-style** production underperformed regardless of format.

TikTok



- ✓ On TikTok, for awareness, authority drove performance. **Content featuring trusted figures**, doctors, religious leaders, and parents sharing their own experience **speaking directly to camera**, delivered the most cost-efficient reach of any format tested on the platform.
- ✓ For driving website visits, single-speaker direct-to-camera formats (the same approach that led on awareness) lost ground to **conversational dialogue between two or more people**. The exchange format, two people working through a concern together, a husband and wife, a mother and a CHW, matched the platform's native content environment more closely than a monologue.

TikTok



- ✓ When the same message was tested across both video and carousel formats for website traffic, **carousel** consistently **outperformed video**, making it the more reliable choice when time or resources required a single format to carry the objective. The combination that produced the strongest and most consistent results across both engagement and traffic was **carousel paired with dialogue**, a format that delivered the conversational dynamic of the top-performing video content within a structure that drove click-through more reliably.



YouTube



- ✓ Content that **opens with a direct problem statement** in the first few seconds and keeps it **short** consistently achieves the highest view rates. A **natural storytelling** and **conversational** approach is a recurring pattern among top-performing content.



- ✗ Openings that does not immediately address caregivers' pain points underperform.

Demand Gen



- ✓ **Relatable everyday scenarios** shot in **real locations**, a husband and wife talking at home, a mother and a CHW speaking in a garden, **opening with natural dialogue** rather than a scripted hook, dominated performance across the board.



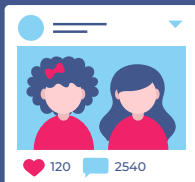
- ✗ Static visuals, motion graphics, studio settings, and promotional framing all registered to audiences as advertising, and audiences treated them accordingly.

- ✓ On Online Media Publishers ads, concept and narrative mattered less here than the precision of visual and linguistic choices within the creative itself. Content that **showed the full family unit** (father, mother, and child together) and addressed them with **warm, familiar language**, terms like "mom and dad" and "beloved child," performed better.
- ✓ **Culturally resonant timing** produced results that went beyond seasonal relevance. Lebaran and mudik themes appeared in four of the ten top-performing creatives across the entire campaign period. It reflects the value of entering a conversation that an audience is already having.



- ✗ **Reusing a high-performing creative unchanged in the following month** consistently produced a drop in view rates. The instinct to re-run what worked is understandable given the production investment involved, but the data does not support it. Audiences on display placements habituate faster than campaign cycles typically account for. The solution is to **refresh its execution**. Keep the copy, change the talent. Keep the hook, change the setting.

Influencers



∞ Meta



- ✓ **Community-based, micro, and mid-tier influencers** outperformed larger accounts on save and share rates. These influencers were **embedded in active networks** where their followers had an established habit of engaging with, saving, and redistributing **content they found relevant**.

The content that drove the strongest influencer performance used **hooks** rooted in **everyday debates** and **recognisable parental tensions**. It opened with something a caregiver already cared about and let the health message follow from there.



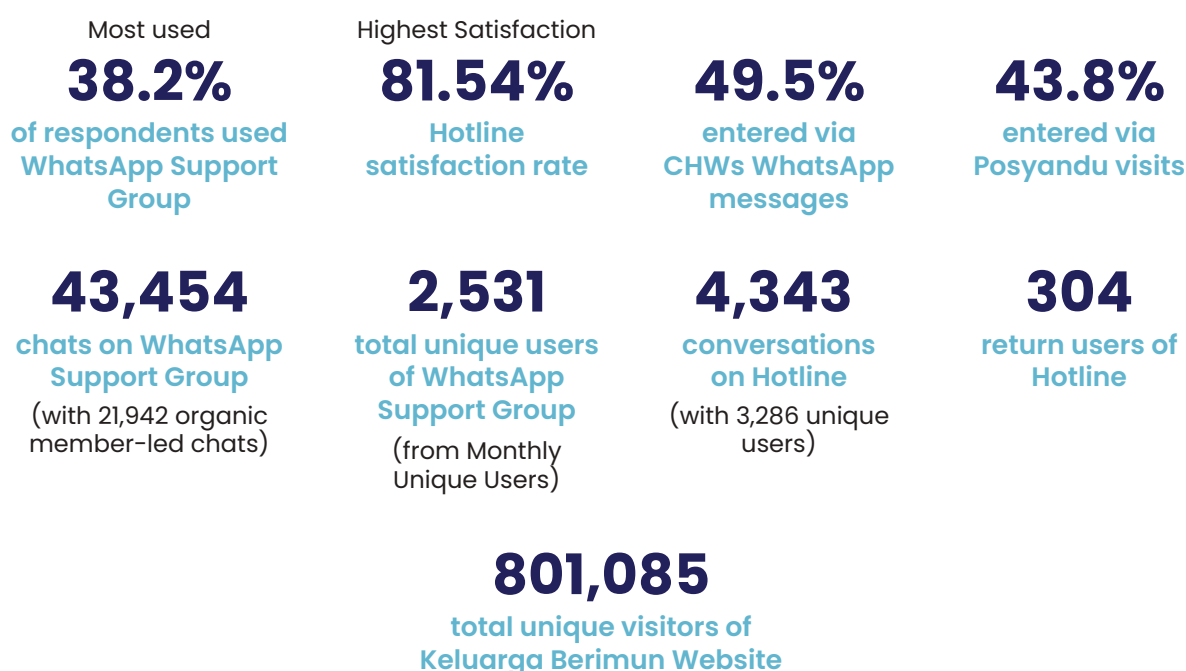
- ✗ **Weak hooks** and content that **lacked a story or an emotional moment** worth staying for consistently underperformed. It wastes the relationship capital that made the channel worth investing in.

- ➡ **News aggregator accounts who share only through Stories** operated as passive broadcast channels. Their audiences followed for information, not for relationship, and content reshared through Stories without context or personal framing produced low engagement figures. Community embeddedness, the degree to which an influencer's audience actively engages, is the variable that predicts influencer's content performance.

Interactive Engagement Outperforms Broadcast Communication

Cost-per-person reach, however impressive, only measures how efficiently a message found an audience. Changing that passive exposure into an active decision to vaccinate requires a two-way conversation. WhatsApp Support Group and Hotline are designed to reach caregivers at the specific moment when a decision was being made or a doubt was forming. Both responded in a way that felt empathetic, credible, and timely.

The WhatsApp Support Group was the most frequently used platform (38.2%), followed by the Website (34.1%) and the Hotline (25.1%). However, the Hotline recorded the highest satisfaction, with 81.54% of users reporting being 'satisfied' or 'very satisfied', compared to the WhatsApp Group (74.7%) and the Website (56.76%). Repeated engagement patterns confirm that caregivers treated the platforms as sustained health resources rather than one-off information sources. Over twelve months, the Hotline handled 4,343 conversations with 3,286 unique users, of whom 304 returned for more than one session. The WhatsApp Support Group generated 43,454 total messages, of which 21,942 were organic member-led exchanges rather than facilitator-initiated content, across 2,531 cumulative monthly unique users with interaction.



(Source: Impact Evaluation, MEL Survey, Digital Analytics)

Nearly half of all caregivers first joined WhatsApp Support Group and Hotline through CHW WhatsApp messages (49.5%). A further (43.8%) entered following direct recommendations at Posyandu visit, from a midwife or Puskesmas staff member who had made the referral a routine part of their service interaction.

Cost conversion data shows that caregivers who arrived through Puskesmas and CHW channels converted far more strongly to Hotline and WhatsApp Support Group access rather than to website visits. This reflects that in-person clinical relationships did not just create awareness of the platforms but also transferred institutional trust to them.

The performance of the interactive platforms reflects a well-documented principle in health systems strengthening: **Digital tools do not generate trust independently. They inherit it from the institutional relationships through which they are introduced.**

In Keluarga Berimun, the WhatsApp Support Group and Hotline functioned as demand-side complements to the existing primary health care infrastructure, extending the reach of CHWs and midwives into the intervals between facility contacts and removing the access barriers, travel, waiting time, social hesitation, that often prevent caregivers from seeking guidance when they need it most.

Did The Metrics Actually Change Anything Beyond the Screen?

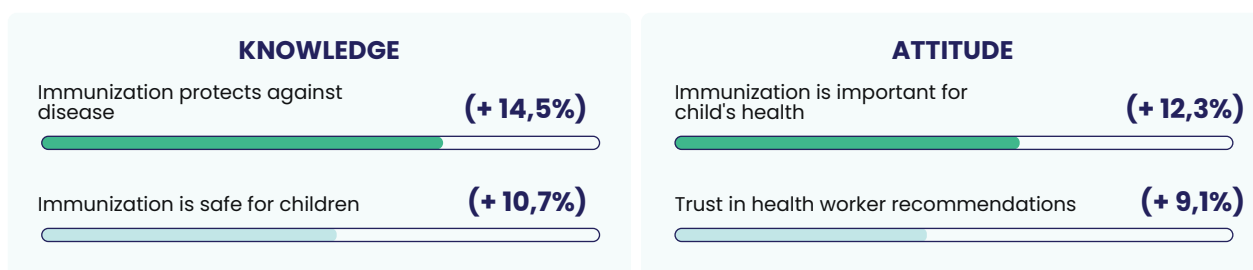
Reach and impressions tell you how far a message travelled. However, they do not tell you whether a child got vaccinated. Therefore, Keluarga Berimun's evaluation was built around six evidence streams, each asking a different question.

The digital analytics tracked how the campaign performed in real time. The monitoring, evaluation, and learning survey captured what caregivers knew, believed, and intended to do. The independent impact evaluation tested whether communities exposed to the programme showed different coverage outcomes than those that were not. Supporting this is the process tracing which analyzes the causal mechanisms that link the cause and outcomes. Implementation research, through interviews and focus group discussions with caregivers and health workers, brought in the reasons behind the numbers. And ASIK administrative records provided the data triangulation check, cross-referencing what caregivers self-reported against the government's own immunization database.

The findings below reflected the weight of evidence across all six, interpreted through a contribution lens rather than strict attribution, given the complexity of factors shaping immunization behaviour in a real-world setting.

The independent impact evaluation, using Difference-in-Differences analysis comparing treatment areas in Depok City and Bekasi Regency against the control area in Semarang City and Kendal Regency, found shifts that go beyond awareness. LPEM's analysis showed that on knowledge, caregivers in treatment areas were 14.5% more likely to believe immunization protects against disease and 10.7% more likely to consider it safe for their child. On attitudes, they were 12.3% more likely to view immunization as important for their child's health and 9.1% more likely to trust health worker recommendations (see chart below). Beyond these headline shifts, treatment-area caregivers were also 11.8% more likely to see government vaccines as beneficial, 11.2% more likely to see vaccination as an effective way to protect against disease, and 8.3% more likely to find vaccine-related information trustworthy. These findings represent movement on the beliefs and attitudes that most directly predict whether a caregiver follows through.

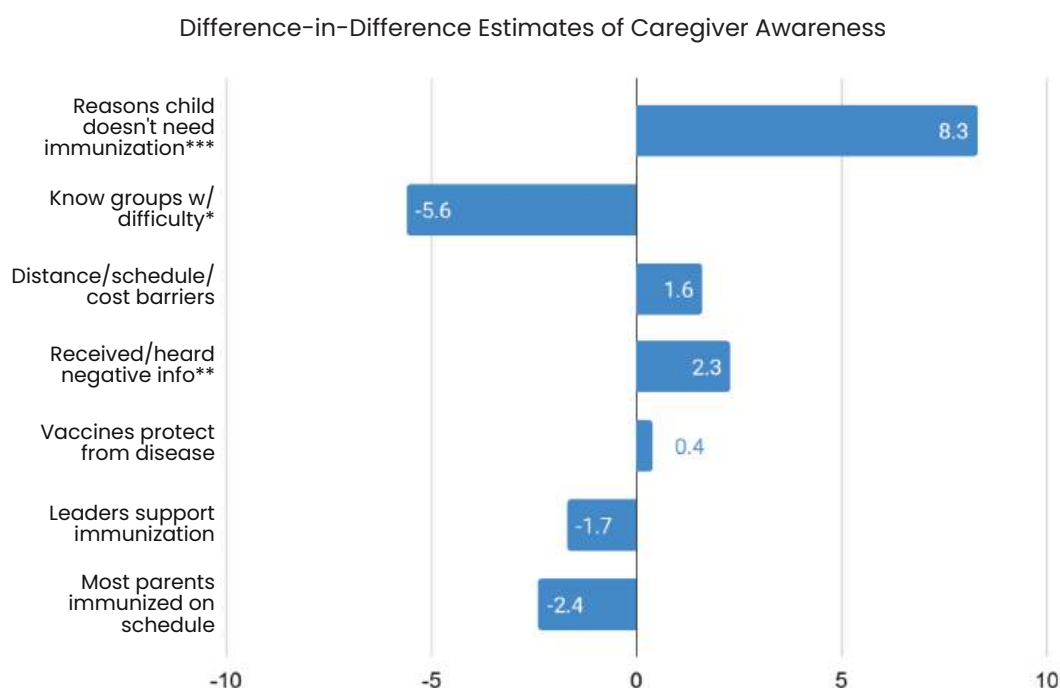
Knowledge & Attitude Gains



(Source: Impact Evaluation)

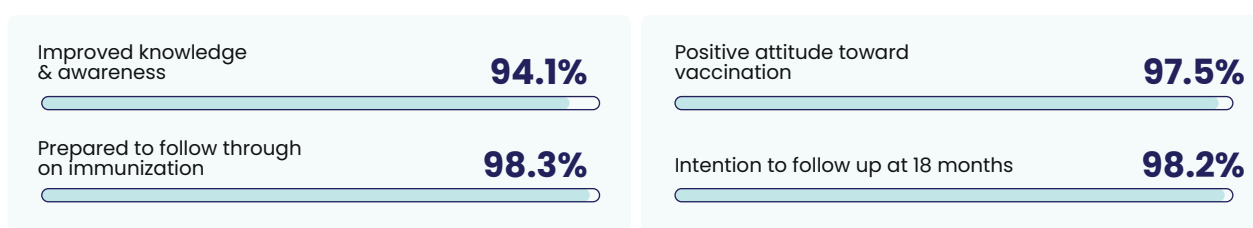
On the other hand, the same analysis found no statistically significant effects on behavioral hesitation indicators, such as feeling doubtful or reluctant, ever refusing immunization, or having reasons that prevent immunization. Similarly, there is no significant impact on concerns about vaccine side effects or perceptions that vaccines cause harmful effects. Overall, the results indicate that while the intervention effectively improved positive attitudes and trust toward immunization, it did not significantly shift reluctance or concerns related to vaccine risks.

Awareness-related outcomes showed a similarly mixed picture. LPEM's Difference-in-Difference analysis of caregiver awareness indicators suggests that most awareness-related outcomes did not show statistically significant changes between treatment and control areas from midline to endline. This indicates that, while the campaign may have contributed to exposure and engagement, measurable changes in broader awareness and belief indicators were less consistent over the evaluation period. Two indicators showed marginally significant changes: the proportion of respondents who reported knowing ethnic or religious groups facing difficulty immunizing their children decreased more in treatment areas than in control areas, while the proportion reporting reasons why children do not need to be immunized increased more in treatment areas than in control areas. These findings should be interpreted cautiously, as the estimates are based on simple DiD models without covariate adjustment and may reflect underlying differences in community context, salience of hesitancy-related issues, or increased articulation of concerns rather than a direct negative programme effect.



(Source: Impact Evaluation – LPEM. Values shown in percentage points; see Annex 12 for the full table.)

Programmatically, these findings suggest that **awareness-building alone may not be sufficient to shift deeper immunization-related beliefs and concerns**. Future campaign iterations may need to strengthen targeted myth-busting, interpersonal counselling, and community-level engagement with trusted actors, particularly in areas where caregivers continue to express reasons for delaying or refusing immunization. These LPEM-measured shifts are echoed in CISDI's own self-reported monitoring data below, drawn from a larger, programme-wide respondent base rather than the smaller treatment-control comparison LPEM uses. That same monitoring data suggests caregivers didn't just absorb the message, they followed through: among those who recalled exposure to the programme, nearly all felt more informed, more confident, and more prepared to act. Intention to complete the full immunization schedule at 18 months stood at 98.2%. Among eligible respondents, 89.8% reported their child had received at least one vaccination. LPEM's independent impact evaluation shows more conservative figures for these same indicators (90% and 20.1% respectively), reflecting differences in study design and respondent base rather than a disagreement in direction. These track closely with what the programme's Theory of Change predicted would happen if the communication strategy worked as designed.



(Source: MEL Survey)

Looking more closely across subgroups, the campaign's strongest impact was among pregnant women. Independent impact evaluation data shows that **mothers** reached by the campaign **during pregnancy** were **17 percentage points more likely to have a child who completed their full immunization schedule**.

Strongest Impact Signal

Pregnant women who were significantly exposed to the Keluarga Berimun campaign were

17 pp more likely

to have a child with complete immunization

This finding has a direct implication for how programmes, like Keluarga Berimun, allocate their earliest investment. **The pregnancy and immediate postpartum period are the highest-leverage window in immunization communication** because hesitancy has not yet formed.

Was It Worth the Investment?

Reaching a caregiver before doubt takes hold is categorically different from reaching one whose child has already missed two doses and who has, consciously or not, made a series of small decisions that led there.

The cost data shows they are not the same investment. Getting immunization information into the hands of a caregiver and ensuring they find it useful costs IDR 82,307 (USD 4.99) per person. Moving that awareness into a genuine intention to vaccinate costs IDR 112,562 (USD 6.82). Helping a caregiver who knows the schedule but has not yet acted costs IDR 156,958 (USD 9.52). These are manageable investments at the early stages of the immunization journey.

Cost per Person Influenced (CpPI)	Cost per Attributable Outcome (CpAO)			
Knowledge gained and found useful	Intent to immunize	Improving schedule awareness	Completing all previously missed vaccines	Intending to catch up on missed vaccines
IDR 82,307 USD 4.99	IDR 112,562 USD 6.82	IDR 156,958 USD 9.52	IDR 393,966 USD 23.88	IDR 1,036,945 USD 62.87

*) Note: CpAO figures are calculated using midline survey data, per LPEM's methodology. LPEM's own report notes that this choice tends to make the campaign appear more cost-effective than an endline-based calculation would, and that the survey sample is not fully representative of the broader population. LPEM includes an endline-based sensitivity check as a recommendation for future analysis but did not produce that additional calculation within this deliverable. These figures should therefore be read as indicative rather than precise, population-level estimates.

Once vaccines start being missed, the cost curve shifts sharply. Moving a caregiver who has already missed a dose to intend catch-up costs IDR 1,036,945 (USD 62.87), nearly ten times the cost of reinforcing intent at the start. Reaching the smaller group of caregivers who maintain perfect on-time adherence, never missing a scheduled dose, costs IDR 393,966 (USD 23.88) per person, still more than three times the cost of early-stage engagement, though considerably less than recovering intent after a lapse has already occurred.



At the vaccination outcome level, the programme estimates an indicative cost of IDR 1,223,996 (USD 74.18) per additional child completing basic immunization (IDL). Based on the observed **3.78 pp increase in IDL coverage** among 36,803 surviving infants in Depok City and Bekasi District, that increase corresponds to approximately **1,391 additional children completing basic immunization supported by the programme**. This is a treatment-area, before-after estimate.**

***) Note: The current calculation draws on ASIK data collected as of December 2025. Of self-reported immunizations from programme surveys, only 54% could be verified against ASIK records at that point in time. Given the well-documented lag in ASIK data entry at the facility level, December 2025 records likely undercount what was administered on the ground by that point.*

What Got in the Way and What Did We Learn From It?

Every programme surfaces constraints that the design did not fully anticipate, and some that it did anticipate but could not solve because solving them sat outside the programme's boundary.

The most significant constraint the programme encountered was structural, and it sits at the intersection of demand generation and service delivery. Vaccine stock-outs, unpredictable service hours, long waiting times, and inconsistent service quality at the facility level meant that motivated caregivers, some of whom had taken considerable effort to overcome their own doubts, encountered a system that was not functioning reliably enough to complete the transaction. At Posyandu specifically, 49.6% of caregivers reported occasional long waiting times and 9.3% reported recurring long waits, while 6.8% cited insufficient staffing to serve demand. When service readiness is not addressed alongside demand generation, the ceiling on what communication can achieve is set not by the quality of the messaging but by the reliability of the service waiting at the other end. This is the classic demand-supply misalignment that has

limited the impact of standalone communication interventions across multiple country contexts.^{2,3,4}

Increased knowledge did not consistently translate into reduced doubt. While the campaign produced significant, measurable gains in knowledge and positive attitudes, it did not significantly shift behavioural hesitation, indicators like feeling doubtful, having reservations, or citing reasons to delay immunization remained statistically unchanged between treatment and control areas. This suggests that for some caregivers, hesitancy is rooted in something more durable than an information gap, deeply held beliefs, past experiences, or social norms, that awareness-building alone does not reliably resolve. Closing this gap likely requires the more resource-intensive approaches.

Identifying influencers whose values genuinely aligned with a public health mandate, free from affiliations with ultra-processed food brands or infant formula, proved consistently difficult. Also, among religious leaders, a significant proportion were not yet in a position to publicly endorse immunization. This limited the programme's ability to activate one of the most powerful trust channels available in Indonesian communities, particularly in reaching audiences where existing hesitancy was deepest. The messengers with the greatest potential to shift the hardest-to-reach populations were, in many cases, the least accessible to the programme.

Digital reach, while substantial at the aggregate level, was not uniformly distributed across the target population. Smartphone access and internet connectivity gaps in certain communities within the intervention areas meant that digital channels could not fully penetrate some of the populations the programme most needed to reach. In practice, this shifted more of the communication burden onto offline channels, particularly community health workers and Posyandu networks, than the original channel strategy had assumed. That shift worked, but it also surfaces questions worth answering for future programmes operating in areas with uneven digital access: how much further could digital reach have gone with active access support, whether through public wifi at Posyandu facilities, device-sharing facilitated by community health workers, or community-level digital literacy support?

The data infrastructure constraints deserve particular attention because they shaped both what the evaluation could measure and how confidently it could report findings. ASIK records contained inconsistencies, including duplicate names, mismatched birth dates, and address discrepancies, that complicated verification and produced a 54%

²Siddique, A. R., Sayem, A. S. M., Rahi, A., & Musuka, G. (2026). Persistent immunization inequities – a review and analysis of country immunization coverage and equity assessments using the modified Tanahashi model. *Vaccine*: X, 30, 100816. <https://doi.org/10.1016/j.jvacx.2026.100816>

³Paul AM, Nepal S, Upreti K, Lohani J, Rimal RN. (2022). The last stretch: Barriers to and facilitators of full immunization among children in Nepal's Makwanpur District, results from a qualitative study. *PLoS ONE* 17(1): e0261905. <https://doi.org/10.1371/journal.pone.0261905>

⁴Chaney, S. C., & Mechael, P. (2023). So many choices, how do I choose? Considerations for selecting digital health interventions to support immunization confidence and demand. *Journal of Medical Internet Research*, 25, e47713. <https://doi.org/10.2196/47713>

match rate between self-reported immunizations and administrative records. The remaining outcome data rests on caregiver self-report, which carries known risks of recall bias and social desirability effects, and should be read accordingly alongside the verified figures.

The temporal lag in data availability did not just limit the evaluation but also limited the programme's ability to iterate in real time, adjusting targeting, channel mix, and resource allocation based on what the evidence was showing. Faster feedback loops between administrative systems and programme monitoring would have made both the evaluation and the campaign itself more effective.

The lack of a clear pathway between promotion and immunisation. One gap that cuts across several of the constraints above is the absence of a system linking promotion engagement directly to service access. A caregiver who clicks on a post, watches a video, or engages with a WhatsApp message has already cleared a significant motivational hurdle. Without a mechanism to convert that moment into a booked appointment or a directed referral to a nearby facility, the programme relies on the caregiver sustaining that motivation through an unstructured gap. The same missing link also makes attribution nearly impossible: when there is no direct connection between a promotion and the action it is meant to trigger, there is no reliable way to track which content, channel, or message actually led a caregiver to complete immunization. The infrastructure for journey-linked conversion did not exist at scale in this context, but it represents one of the more tractable design problems for future programmes, and one where digital health investment would have direct returns on both communication effectiveness and programme accountability.

If We Were Starting Again Tomorrow, Here Is What We Would Do Differently

1. **Integrate into antenatal care from the start, and build for the full schedule from there.** The 17-percentage-point finding among pregnant women is the strongest impact signal in this evaluation, and it has direct implications for how the next programme gets structured. The next programme would embed immunization communication into that contact systematically and specifically. Key immunization messages in the Buku KIA would be designed to reflect the social and cultural characteristics of the target area rather than carrying generic national messaging. Immunization modules would be integrated into every ANC touchpoint and built into the standard flow of each contact. The communication brief for midwives and community health workers during pregnancy would be expanded to include immunization planning alongside birth planning, so that a mother who leaves an antenatal visit with a clear delivery plan also leaves knowing her child's full immunization schedule, understanding what each vaccine is for, and prepared for what to expect after each dose. By the time a child is born, the groundwork for completing the full immunization schedule should already be in place.

2. **Close the feedback loop between demand and service delivery.** The programme's sustained and direct engagement with caregivers created an asset that can be leveraged to provide real-time, ground-level visibility into the service delivery conditions that caregivers were actually encountering. A light but systematic mechanism through which caregivers can flag service barriers, stock-outs, unexpected closures, extended waiting times, would generate facility-level feedback that district health authorities currently have limited capacity to collect between formal supervisory cycles.

For example, when a caregiver reports through the WhatsApp platform that she arrived at her Puskesmas and found no vaccine stock, that report does not need to wait for a facilitator to read it, escalate it, and wait for a response. A decision-support algorithm integrated into the platform's backend could process that report in real time, cross-reference it against SMILE stock data across facilities in the district, and automatically return to the caregiver with the nearest facility that has confirmed stock available, the operating hours, and directions. Simultaneously, the algorithm flags the stock-out to the Puskesmas immunization coordinator and generates an accelerated resupply request through the normal procurement channel.

Integrated into existing district health management processes, that feedback loop and escalation protocol would reposition WhatsApp platform into a demand-responsive decision support system that strengthens the responsiveness of the supply side with relatively low incremental cost but potentially significant returns.

3. **Build the data infrastructure before the programme begins.** The 54% ASIK match rate reflects a data infrastructure gap that limited the programme's ability to verify impact. The next programme would establish a programme-level caregiver registry from the first point of contact, built in a format aligned to ASIK's own field definitions and identifier standards so that linkage is possible throughout implementation. Quarterly linkage testing would be built into the MEL workplan so that matching failures are identified and corrected within the same implementation cycle that generated them.

Underpinning that registry is a formal data sharing agreement that needs to be negotiated with the Ministry of Health and the relevant District Health Offices during programme design. That agreement would cover data transfer schedules, standardised file formats, field definitions, and a designated data custodian on both sides. It would also establish the data governance framework required under Indonesia's Personal Data Protection Law, covering informed consent procedures, access controls, data retention periods, and destruction protocols at programme close.

4. **Scale what the evidence supports, and invest in learning what it does not yet answer.** The evidence is clearest at the earliest stages of the immunization journey and that is where scaling should begin. The integrated channel model, combining promotions on different social media platforms, collaboration with CHW and Puskesmas and using interactive digital platforms for sustained interactive support, is well supported by the data and should be scaled with confidence in the antenatal and early postnatal window. Resource allocation across those channels should follow the efficiency evidence the programme has already produced rather than distributing budget evenly across platforms that serve fundamentally different functions in the caregiver journey.

For later-stage vaccines, the evidence is thinner. The programme demonstrated that digital channels build awareness and intention effectively, but what converts that intention into completed schedules is not yet well understood. The next investment should run structured pilots for later-stage vaccine completion with built-in learning cycles, testing whether more intensive facilitator support, stronger CHW integration, or facility-based reminder systems produce the completion outcomes that digital reach alone did not conclusively demonstrate.

Now the Grant Ends, Who Keeps It Going?

External funding for Keluarga Berimun has closed. Keluarga Berimun is now entering a test of whether the programme can function under routine government management.

Both District Health Offices in Depok City and Bekasi Regency have assumed operational ownership of the WhatsApp Support Group, with designated facilitators, jointly developed SOPs, and KPIs established through a structured phasing-over process conducted through April to May 2026. Nine out of twelve Puskesmas have committed to maintaining Keluarga Berimun content in active use through existing health facility channels. At the national level, **the Ministry of Health has signalled programmatic alignment through its planned "WhatsApp Ibu Pandai" initiative. The West Java Provincial Health Office has indicated interest in provincial replication.**

CISDI's role going forward is more realistic in scope. Through joint learning forums that CISDI already facilitates across Puskesmas networks, there is a functioning channel to discuss facilitator challenges, refresh content strategy, and share what is working and what is not across adopting sites. Those forums keep institutional knowledge circulating between the Puskesmas, the District Health Offices, and CISDI as technical partners.

Conclusion

Keluarga Berimun set out to answer a practical question: can a multi-channel digital demand-generation programme move Indonesian caregivers from hesitancy to action on childhood immunization, and can it do so at a cost and scale that makes it worth replicating? The evidence is encouraging, though this report has tried to be clear about where the gaps remain.

At the early stages of the caregiver journey, where awareness, attitudes, and intention are most responsive to well-sequenced communication, the programme produced consistent and meaningful shifts. The cost-effectiveness data makes a compelling case that this is also where investment produces the greatest return. Reaching a pregnant woman before hesitancy forms costs a fraction of what it takes to recover a caregiver who has already started missing doses. That finding alone should reshape how the next programme allocates its earliest resources.

Whether the programme moved the needle on actual vaccination coverage across the population is harder to demonstrate conclusively. For later-stage vaccines, where most dropout happens, the programme does not yet have a clear enough answer on what works, a pattern echoed in the vaccine-specific data itself, where DiD estimates for multi-dose series like DPT-HB-Hib and Rotavirus trend toward zero or negative by the third dose. One specific finding, a statistically significant negative DiD estimate for Polio injection 2, remains unexplained and is flagged for priority follow-up investigation. That needs to be the next programme's explicit mandate to find out.

The foundation for sustainability already exists. What scaling well requires is a parallel investment in supply-side readiness so that motivated caregivers find a functional service when they arrive and verified data infrastructure so that the next programme can measure what it achieves with more confidence.

