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DEMOGRAPHIC CONTEXT – MADEIRA IS AGEING FAST

WHY LIFE-COURSE VACCINATION MATTERS IN A SMALL, AGEING REGION

- *In the Autonomous Region of Madeira, population ageing continues to intensify. In 2023, children and young people (0–14 years) represented about **12.2%** of the resident population, adults 15–64 years accounted for around **two thirds**, and older people (65+ years) reached about **20.9%***
- *The ageing index – the number of older people per 100 young people – has risen sharply over the last decade, from around **99 in 2013** to about **172 in 2023**, confirming a structural and sustained ageing trend in the Region .*
- *At the end of 2023, Madeira had approximately **256,600 residents**, the highest value since 2015, driven mainly by migration inflows, but with a continued decline in the proportion of younger age groups Long-term projections indicate that Madeira is likely to become one of the most aged regions in Portugal by **2080**, with an ageing index that may exceed **400 older people per 100 young people** in the central scenario*

THE EVOLUTION OF PNV VERSUS PRV

FROM EARLY REGIONAL INNOVATIONS TO NATIONAL–REGIONAL CONVERGENCE

Historically, the Regional Vaccination Programme (PRV) in Madeira has followed the National Vaccination Programme (PNV), while using regional autonomy to move earlier in some decisions – anticipating the introduction of certain vaccines or creating targeted extra-programme schemes for specific risk groups.

These anticipations were based on epidemiological assessment, expert advice and continuous monitoring of international evidence, with the aim of offering earlier protection where local needs were more pressing (for example, in selected paediatric and risk-group indications).

When the PNV later incorporated these vaccines or indications, the regional experience helped to validate feasibility and impact and facilitated alignment between the national and regional programmes.

Today, the core childhood calendar is largely convergent between PNV and PRV. The main differences relate to the pace of adoption and to how adult and risk-group vaccination are organised at regional level – including seasonal influenza, COVID-19 and the potential future use of vaccines such as herpes zoster and RSV in older adults.

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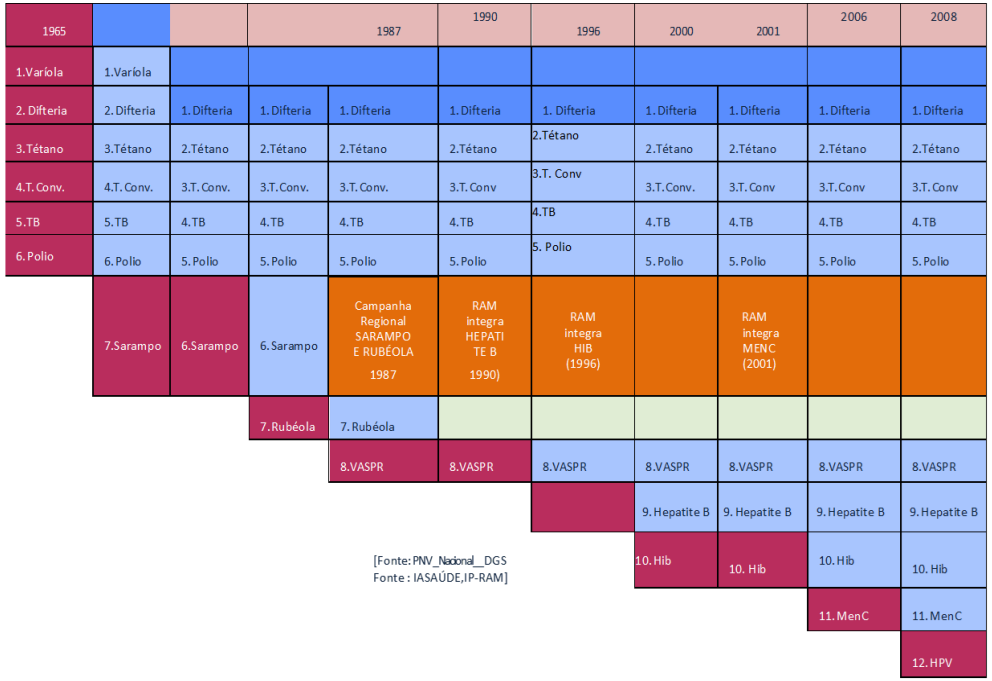
PAST INNOVATIONS: REGIONAL ANTICIPATIONS IN MADEIRA

EXAMPLES OF VACCINES INTRODUCED EARLIER IN MADEIRA THAN IN THE NATIONAL PROGRAMME



Over the last decades, the Autonomous Region of Madeira has used its regional autonomy to anticipate several vaccination decisions compared with the National Vaccination Programme (PNV).

In 1987, Madeira implemented a regional measles and rubella campaign, accelerating population protection and contributing to earlier control of these diseases on the islands.

In 1990, the Regional Vaccination Programme integrated hepatitis B into the childhood schedule before it became universal in mainland Portugal.

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PAST INNOVATIONS: REGIONAL ANTICIPATIONS IN MADEIRA

EXAMPLES OF VACCINES INTRODUCED EARLIER IN MADEIRA THAN IN THE NATIONAL PROGRAMME

1965			1987		1990	1996	2000	2001	2006	2008
1.Varíola	1.Varíola									
2. Difteria	2. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria	1. Difteria
3.Tétano	3.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano	2.Tétano
4.T. Conv.	4.T. Conv.	3.T. Conv.	3.T. Conv.	3.T. Conv.	3.T. Conv	3.T. Conv	3.T. Conv.	3.T. Conv	3.T. Conv	3.T. Conv
5.TB	5.TB	4.TB	4.TB	4.TB	4.TB	4.TB	4.TB	4.TB	4.TB	4.TB
6. Polio	6. Polio	5. Polio	5. Polio	5. Polio	5. Polio	5. Polio	5. Polio	5. Polio	5. Polio	5. Polio
	7.Sarampo	6.Sarampo	6.Sarampo	Campanha Regional SARAMPO E RUBÉOLA 1987	RAM integra HEPATITE B 1990)	RAM integra HIB (1996)		RAM integra MENC (2001)		
			7.Rubéola	7. Rubéola						
				8.VASPR	8.VASPR	8.VASPR	8.VASPR	8.VASPR	8.VASPR	8.VASPR
							9. Hepatite B	9. Hepatite B	9. Hepatite B	9. Hepatite B
							10. Hib	10. Hib	10. Hib	10. Hib
									11. MenC	11. MenC
										12. HPV

[Fonte: PNV_Nacional_DGS
Fonte : IASAÚDE,IP-RAM]

In 1996, Madeira introduced Haemophilus influenzae type b (Hib) vaccination ahead of the national calendar, reinforcing protection against severe meningitis and other invasive disease.

In 2001, the Region integrated meningococcal C (MenC) conjugate vaccine at regional level, once again moving earlier to protect children and adolescents.

These anticipations were based on epidemiological assessment, scientific evidence and expert advice, and were later followed by national decisions, illustrating a pattern of early regional innovation followed by national–regional convergence.

Vaccination as a strategic pillar in the Regional Health Plan 2021–2030

(4) Manutenção ou melhoria dos problemas de saúde que se encontram controlados.

Entre os problemas de saúde que se encontram controlados, ou seja, que têm baixa magnitude, mas potencial de risco, assinalam-se os relacionados com a mortalidade materna e infantil e as doenças evitáveis por vacinação.

A continuidade do investimento e a sustentabilidade de ações efetivas dirigidas a estas problemáticas serão determinantes para evitar a sua reemergência ou agravamento.

Os dados da morbilidade, da vacinação, alguns determinantes biológicos, psicossociais e ambientais e da prestação de cuidados de saúde foram obtidos, através da DRS ou do SESARAM, EPERAM, do INE e de publicações da DGS, no mesmo período. Assinala-se, contudo, que a atualidade deste diagnóstico está condicionada pela disponibilidade de dados oficiais à data da recolha e pela divulgação de novos dados (ver documento de apoio ao PRS 2021-2030).

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The Regional Health Plan 2021–2030 explicitly includes vaccination data among the core indicators used to evaluate population health.

Vaccine-preventable diseases are identified as “controlled health problems” that still require continuous attention to avoid re-emergence.

The Plan states that maintaining or improving control of these problems depends on sustained investment in effective vaccination actions.

This means vaccination is not seen as an isolated programme, but as a strategic lever for maternal and child health and for reducing avoidable morbidity and mortality.

From strategy to action – vaccination within the prevention axis

Estratégias de Intervenção

(2) **Prevenção** – A Prevenção das doenças e a redução do seu impacto, em especial das doenças crónicas, das neoplasias, das doenças transmissíveis e das lesões com diferentes origens, é entendida como o eixo estratégico que enquadra as respostas mais diretas aos problemas de saúde de elevada magnitude ou de elevado potencial de risco detetados. Integra as estratégias dirigidas às doenças que mais ameaçam a saúde da nossa população, e que podem ser preveníveis, se fatores de risco forem eliminados ou reduzidos ou através da vacinação, e controláveis, se mais precocemente detetadas e adequadamente tratadas. Este eixo orientador implica a revisão e reforço de estratégias efetivas para a redução das necessidades de saúde identificadas.

- Promoção da vacinação da população no que respeita às vacinas do Plano Regional de Vacinação ou às incluídas em estratégias complementares de vacinação (por exemplo, as campanhas de vacinação sazonal contra a gripe e contra a COVID-19);

In the Prevention axis of the Plan, vaccination is highlighted as a key strategy to reduce the impact of chronic diseases, transmissible diseases and other high-risk conditions.T

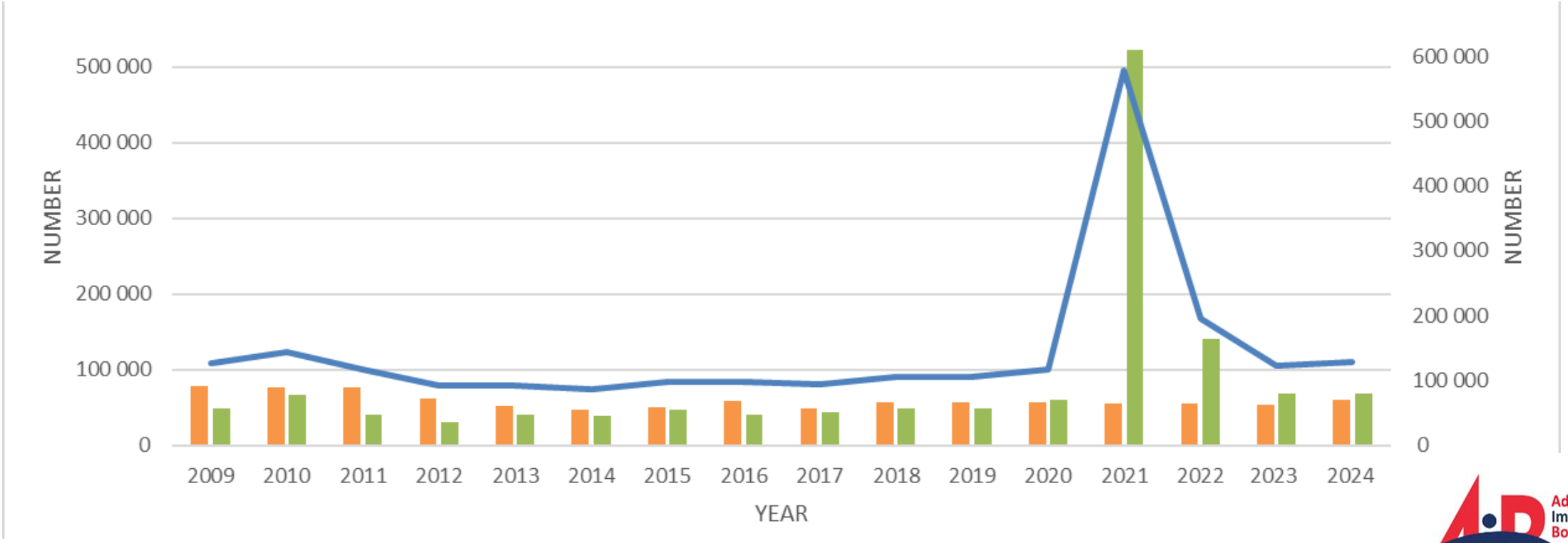
The Regional Health Plan calls for a review and strengthening of effective vaccination strategies as part of broader preventive care.

It explicitly promotes vaccination both for the routine vaccines included in the Regional Vaccination Programme and for complementary strategies, such as seasonal campaigns against influenza and COVID-19.

Overall, vaccination is framed as a central component of prevention and resilience in the Regional Health System of Madeira.

Total doses delivered through the Regional Vaccination Programme (PRV) and extra-programme campaigns, Madeira 2009–2024
Stable routine activity with an exceptional surge during the COVID-19 vaccination campaigns3

SOURCE: Institute of Health Administration, IP-RAM / Directorate-Regional of Health



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From 2009 to 2019, routine vaccination activity in Madeira remained stable, with around 100,000 doses per year delivered through the PRV and extra-programme schemes.

In 2021–2022, there was an exceptional surge in extra-programme doses, reflecting the large-scale COVID-19 vaccination campaigns, which the regional system was able to absorb and deliver efficiently.

In 2023–2024, activity returns closer to pre-pandemic levels, but remains slightly higher, suggesting a lasting reinforcement of adult and risk-group vaccination.

Vaccination coverage at 1 year of age in Madeira, 2017–2023

Consistently high coverage in the Regional Vaccination Programme (PRV)

Type of administrated vaccine	Year						
	2017	2018	2019	2020	2021	2022	2023
Vaccine against TB	9,6	10,6	13,9	x	x	x	x
Vaccine against hepatitis B (3rd inoculations)	97,8	98,6	98,8	99,2	98,9	98,4	98,5
Vaccine against invasive disease caused by *Haemophilus influenzae* (3rd inoculations)	98,9	99,6	99,0	99,2	98,9	98,4	98,5
Conjugate vaccine against infections by *Streptococcus pneumoniae* of 13 serotypes (2nd inoculations)	98,2	98,9	98,7	99,4	99,5	97,4	98,9
Vaccine against diphteria (3rd inoculations)	98,9	99,6	99,0	99,2	98,9	98,4	98,5
Vaccine against tetanus (3rd inoculations)	98,9	99,6	99,0	99,2	98,9	98,4	98,5
Vaccine against whooping cough/pertussis (3rd inoculations)	98,9	99,6	99,0	99,2	98,9	98,4	98,5
Injectable inactivated vaccine against polio (3rd inoculations)	98,9	99,6	99,0	99,2	98,9	98,4	98,5
Vaccine against invasive disease caused by Neisseria meningitidis C (2nd inoculations)	x	x	x	x	98,7	97,7	99,0

> 95%

Source: Directorate-General of Health

- In 2023, vaccination coverage at 1 year of age is above 95% for all vaccines included in the schedule (hepatitis B, Hib, pneumococcal, diphtheria, tetanus, pertussis, polio and MenC).

- From 2017 to 2023, coverage has remained high and very stable, confirming strong performance of the Regional Vaccination Programme (PRV) in early childhood.

- These results demonstrate that, today, Madeira is fully aligned with the National Vaccination Programme for childhood vaccines and provides a solid base for a life-course approach to vaccination.

Vaccination coverage at 2 years of age in Madeira, 2017–2023)

Unit: %

Type of administrated vaccine	Year							
	2017	2018	2019	2020	2021	2022	2023	
Vaccine against invasive disease caused by *Haemophilus influenzae* (4th inoculations)	97,7	98,0	97,3	95,0	97,5	95,9	94,2	< 95%
Vaccine against invasive disease caused by *Neisseria meningitidis* C (single dose)	98,5	98,5	98,6	97,4	99,2	98,5	97,9	
Conjugate vaccine against infections by *Streptococcus pneumoniae* of 13 serotypes (3rd inoculations)	98,1	97,2	97,9	97,3	99,1	97,5	96,4	
Vaccine against diphteria (4th inoculations)	98,0	98,1	97,3	95,0	97,5	95,9	94,2	
Vaccine against tetanus (4th inoculations)	98,0	98,1	97,3	95,0	97,5	95,9	94,2	< 95%
Vaccine against whooping cough/pertussis (4th inoculations)	98,0	98,0	97,3	95,0	97,5	95,9	94,2	
Vaccine agains measles (1st inoculations)	98,7	99,0	98,6	98,5	99,5	98,8	98,4	
Vaccine against mumps (1st inoculations)	98,7	99,0	98,6	98,5	99,5	98,8	98,4	
Vaccine against rubella (1st inoculations)	98,7	99,0	98,6	98,5	99,5	98,8	98,4	
Injectable inactivated vaccine against polio (4th inoculations)	x	x	x	95,0	97,5	95,9	94,2	< 95%
Vaccine against invasive disease caused by Neisseria meningitidis C (3rd inoculations)	x	x	x	x	93,9	97,9	96,7	

Source: Directorate-General of Health

Notes:
From 2017 onwards, vaccine coverage will be made available by vaccine against a disease, not by monovalent or combined vaccine.
These values are in accordance with the recommended scheme.
Since 2016, BCG vaccine is recommended only for at-risk groups.

- Overall, vaccination coverage at 2 years of age in Madeira remains very high, with most antigens consistently at or above the 95% target throughout 2017–2023.

- In 2020 there is a visible dip for several vaccines, reflecting the disruptive impact of the COVID-19 pandemic on routine services, but coverage recovers quickly in 2021–2023.

- In 2023, a small group of vaccines (Hib 4th dose, DTP 4th dose and polio 4th dose) show coverage around 94.2%, slightly below 95% but still at a very high level, indicating minor gaps rather than structural problems.

- Coverage for meningococcal C (single dose and 3rd dose) and pneumococcal conjugate vaccine remains ≥96–98%, confirming strong uptake of these key infant vaccines.

- Taken together, these data show that the Regional Vaccination Programme is robust and resilient at 2 years of age, with only marginal room for improvement through targeted recall and outreach strategies

Vaccination coverage at 6 years of age in Madeira, 2017–2023

Unit: %

Type of administrated vaccine	Year						
	2017	2018	2019	2020	2021	2022	2023
Vaccine against diphteria(5th inoculations)	94,8	96,0	94,5	97,1	96,4	94,8	94,4
Vaccine against tetanus (5th inoculations)	94,6	96,0	94,5	97,1	96,4	94,8	94,4
Vaccine against whooping cough/pertussis (5th inoculations)	94,6	96,0	94,5	97,1	96,4	94,8	94,4
Vaccine agains measles (2nd inoculations)	98,4	97,2	95,2	97,6	97,0	95,7	94,8
Vaccine against mumps (2nd inoculations)	98,4	97,2	95,1	97,6	97,0	95,7	94,8
Vaccine against rubella (2nd inoculations)	98,4	97,2	95,3	97,6	97,0	95,7	94,8
Injectable inactivated vaccine against polio (4th inoculations)	95,1	95,9	94,6	x	x	x	x
Injectable inactivated vaccine against polio (5th inoculations)	x	x	x	x	96,4	94,8	94,4

< 95%

Source: Directorate-General of Health

Notes:
From 2017 onwards, vaccine coverage will be made available by vaccine against a disease, not by monovalent or combined vaccine.
These values are in accordance with the recommended scheme.
Since 2016, BCG vaccine is recommended only for at-risk groups.

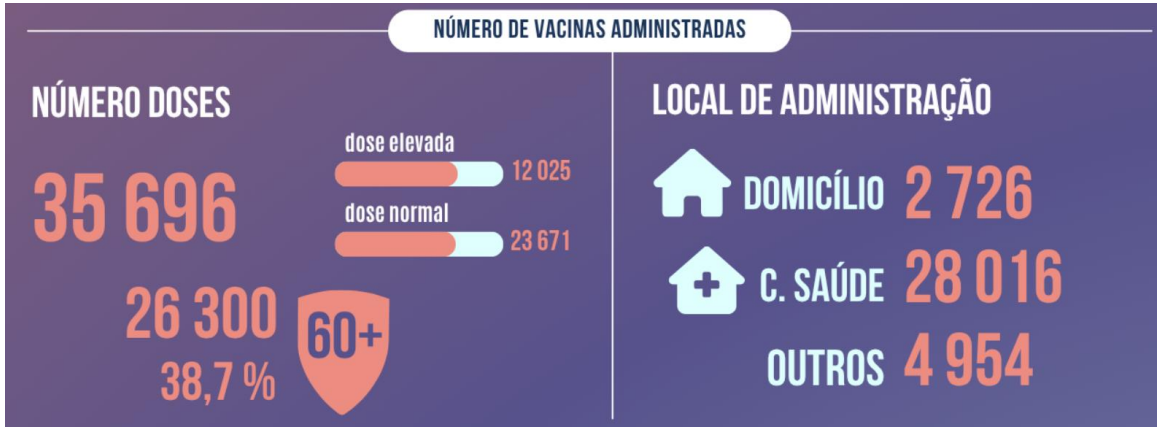
- At 6 years of age, coverage for all booster doses (5th DTP, 4th/5th polio and 2nd MMR) remains very high, generally between 94% and 98% over the 2017–2023 period.

- There is a visible dip in 2020, reflecting the disruption caused by the COVID-19 pandemic, followed by a rapid recovery in 2021–2022.In 2023, coverage for all antigens is around 94.4–94.8%, slightly below the 95% target, suggesting small gaps in completion of school-age boosters rather than structural problems.

- Even so, coverage above 94% provides strong herd protection and confirms that the Regional Vaccination Programme remains robust at school age, with only marginal room for improvement through targeted recall and outreach strategies.

Seasonal Flu Vaccination in RAM, November 2025

- SOURCE: Seasonal Vaccination Bulletin 25-26 No. 8, 23/9 to 16/11/2025



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Direção Regional da Saúde

PRS RAM 2021-2030

- By mid-November 2025, a total of 35,696 influenza vaccine doses had been administered in Madeira.
- Older adults are clearly prioritised: 26,300 doses (38.7%) were given to people aged 60+, including 12,025 high-dose vaccines tailored to this age group.
- Most vaccinations (≈78%) were delivered in primary care health centres (28,016 doses), with home visits accounting for about 8% (2,726 doses) and other settings for the remaining 14% (4,954 doses).
- These figures show a strong operational capacity of the regional system to implement seasonal flu campaigns, reach high-risk older adults and combine fixed-site delivery with community and home-based outreach.

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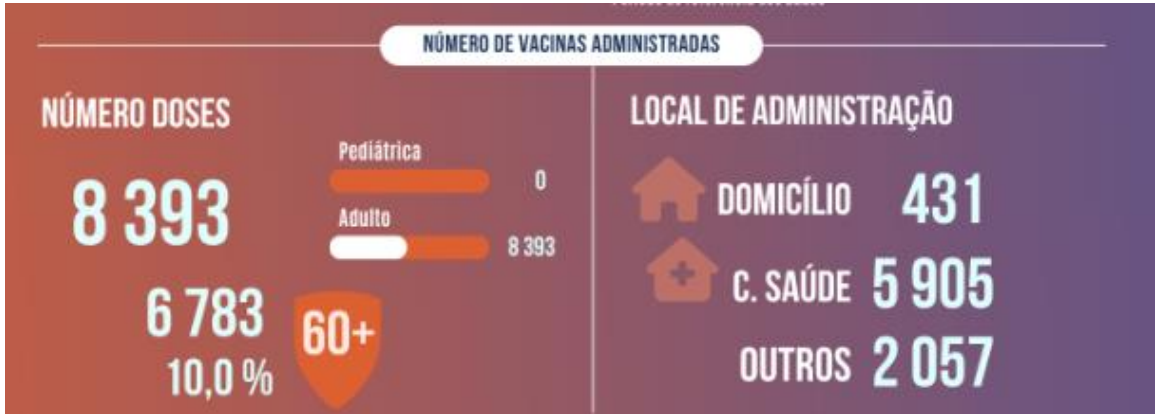
- By mid-November 2025, influenza vaccination in Madeira shows a clear age gradient, with the highest uptake in the oldest age groups (80+), where coverage exceeds 50%.
- Among people aged 65 years and over, an estimated 22,190 individuals had been vaccinated, corresponding to 44.3% coverage in this priority group at this point in the campaign.
- Coverage in the 60–64 age group is noticeably lower than in those aged 65+, indicating room for improvement in younger older-adults, who are also at increased risk of complications.
- Younger age groups (<60) account for a much smaller share of doses and have relatively low coverage, highlighting that the campaign is correctly prioritising older adults, but that further efforts are needed if we want to approach international targets for flu vaccination in people 65+.

COVID-19 VACCINATION, NOVEMBER 2025

- SOURCE: Seasonal Vaccination Bulletin 25-26 No. 8, 23/9 to 16/11/2025



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By mid-November 2025, a total of 8,393 COVID-19 vaccine doses had been administered in Madeira, all in adults (no paediatric doses in this campaign phase).

Among these, 6,783 doses were given to people aged 60+, indicating that boosters are now strongly focused on older adults and high-risk groups (around 10% coverage in this age band at this point in time).

Most doses (5,905) were delivered in primary care health centres, with 431 home visits and 2,057 doses administered in other settings, showing a mixed model of fixed-site and outreach delivery.

Compared with the mass campaigns of 2021–2022, current activity reflects a transition to a routine, targeted booster strategy, aligned with seasonal vaccination and integrated into regular services for adults and older adults.

COVID-19 VACCINATION, NOVEMBER 2025

- SOURCE: Seasonal Vaccination Bulletin 25-26 No. 8, 23/9 to 16/11/2025

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By mid-November 2025, overall COVID-19 booster coverage in Madeira was 3.3% of the population, corresponding to 8,393 doses administered.

Among people aged 65+, 5,878 individuals had been vaccinated, giving a coverage of 11.7% in this priority group at this point in the campaign.

Coverage shows a clear age gradient: from 5.1% in those aged 60–64 to 18.1% in people aged 85+, indicating that the oldest age groups are being actively prioritised for boosters.

Coverage remains very low in adults under 60 and there is virtually no paediatric activity, reflecting a targeted booster strategy focused on older adults and high-risk groups rather than a mass campaign.

• TOWARDS A LIFE-COURSE VACCINATION MODEL

- *Historically, vaccination has been perceived mainly as a paediatric intervention.*
- *Recent Portuguese work – including the +Longevidade Think Tank and adult vaccination projects – argues for a lifelong vaccination strategy to reduce disease burden in adults and older people.*
- *Madeira, with its ageing population and long tradition of early adoption, is a natural laboratory for implementing and evaluating this life-course approach at*

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PROPOSED ADULT VACCINATION SCHEDULE – KEY VACCINES

Human papillomavirus (HPV) vaccine
Seasonal influenza vaccine
High-dose influenza vaccine (for older and frail adults)
COVID-19 vaccine
Pneumococcal vaccines (conjugate and/or polysaccharide, according to age and risk)
Respiratory syncytial virus (RSV) vaccine
Tetanus–diphtheria–pertussis (Td/Tdap) vaccine
Herpes zoster vaccine

Source: +Longevidade Project – Proposal for an Adult Vaccination Schedule in Portugal (final report).

Key messages – Past innovations, current alignment, future directions

Past innovations: Madeira has sometimes moved earlier than mainland Portugal in introducing specific vaccines or targeted schemes, based on evidence and local needs, later converging with national decisions.

Current alignment: Today, the Regional Vaccination Programme and the National Vaccination Programme are largely aligned; the core childhood calendar is very similar, and coverage levels are high, with remaining differences mainly in service organisation and outreach.

Future directions: The next step is to fully embrace a life-course vaccination model, with a strong focus on adults and older adults, integrated into broader longevity and healthy-ageing strategies – a central requirement for health system resilience and socio-economic sustainability in an ageing region like Madeira.

We look forward to learning from other countries and regions, and to sharing our own lessons in return.

- THANK YOU FOR YOUR ATTENTION.