**TITLE PAGE:**

**Title: Planning matters: a document analysis of 24 Portuguese health programmes**

**Authors:** Soraia Costa1,2, Inês Morais Vilaça1,3, Daniela Lima1,4, Lara Pinheiro-Guedes1,5, Suzana Barbosa1,6, Sílvia Salvador1,7, Rachel Barbabela1,8, Ana Cristina Carvalho1,4, Paula Oliveira1,9, Ana Cecília Chaves1,3, Margarida Teixeira1,9, Diogo Caveiro1,10, Alexandre Vieira1,11, Teresa Leão1,12,13

**Soraia Costa** is a Medical Doctor with a master’s in medicine and a specialization in Public Health. She is assigned to the Póvoa de Varzim and Vila do Conde’s Local Health Unit exercising the function of Public Health Resident. She’s collaborated with the work group responsible for creating the health plan for Portuguese prisons and with the Executive Direction of Portugal’s National Health Service.

**Daniela Lima** holds a Ph.D. in Biomedical Sciences and is a Medical Doctor with master's qualifications in Medicine and a degree in Biology. Presently serving as a Medical Resident in Public Health at S. João Local Health Unit and attending a postgraduate course in Public Health Communication. Scientific interests include health policies, health literacy and health promotion. Daniela Lima is now engaged in developing a local program to promote physical activity in the community.

**Inês Morais Vilaça** is Medical Doctor with a master’s in Medicine, working as a Public Health Resident at the Public Health Unit of Vila Nova de Gaia. She finished the Specialization in Public Health at the Public Health Institute of the University of Porto in 2022. Her primary research interests lie in the field of environmental health, focusing on the consequences of climate changes on health. She is also interested in the impact of living conditions and social inequalities on global health.

**Lara Pinheiro-Guedes** is Medical Doctor with a master’s in Medicine and a master’s in Health Statistics. In addition, she holds professional certificates in Digital Transformation and Health Data Analytics. Currently, Lara is currently working as a Medical Resident in Public Health at the local level (Local Health Unit of Tâmega e Sousa). Her primary professional interests revolve around the epidemiology and prevention of non-communicable diseases, with a specific focus on mental health. She is also dedicated to promoting social and behavioural health determinants, engaging in strategic health planning, and contributing to data governance and data quality.

**Suzana Barbosa** has a Master's Degree in Medicine. She is currently a public health resident in the Gerês/Cabreira public health unit of the Local Health Unit of Braga. Her primary research interests include health promotion, health literacy and mental health.

**Sílvia Salvador** holds a Ph.D. in Biomedical Sciences with a focus on Parasitology and has a medical degree complemented by a master's degree and an undergraduate degree in Clinical Analysis and Public Health. She is currently serving as a Public Health Resident at ULSNE in Bragança, Portugal. In her role, she addresses critical aspects of public health, including determinants of population health, the One Health approach, and issues concerning minority health and is actively involved in promoting health education and raising awareness, which aligns seamlessly with her responsibilities in the public health sector.

**Ana Cristina Carvalho** has a Master’s Degree in Medicine and in Dental Science. Currently, is a Public Health resident doctor in the Public Health Unit of Local Health Unit of São João, in Porto.

**Paula Oliveira** holds a Ph.D. in Psychology and is a Medical Doctor holding a M.D. in Medicine. Paula is currently working as a Public Health resident at Santo António Public Health Unit in Porto, Portugal. Her main scientific interests include health promotion/protection, disease prevention, and health literacy mainly in the scope of mental health. She is currently involved in intervention projects focusing different levels of prevention (primary, secondary and tertiary) of addictive behaviours in city of Porto.

**Margarida Teixeira** is a Medical Doctor with master´s in Medicine, currently serving as a Medical Resident in Public Health at the Public Health Unit of Local Health Unit of Santo António. She collaborates with the Public Health Institute of the University of Porto as a researcher, teaches epidemiology at the Faculty of Medicine of the University of Porto and collaborated with the national working group for the development of the health plan for prisons. She is currently working on her PhD in the field of cervical cancer.

**Rachel Barbabela** is a Child and Adolescent Psychiatrist who earned her Medical Degree from the Federal University of Rio de Janeiro, Brazil. In addition to her medical qualifications, she holds a Master's Degree in Public Health from the University of Porto, Portugal. Currently, she serves as a Public Health Resident Doctor at the Matosinhos Public Health Unit. Her primary research focus lies in the field of mental health, particularly the neurodevelopmental impact of health and social determinants on children. She is also interested in health determinants and their implications for mental health from a public health perspective.

**Alexandre Vieira** is a Medical Doctor with a master’s in medicine and is currently working as a Medical Resident in Public Health at Região de Leiria’s Local Health Unit. His interests are Quality and Management in Healthcare.

**Diogo Caveiro** is a Public Health resident at Alto Minho Public Health Unit, holds a Master's in Medicine from the University of Beira Interior, completed a Public Health Specialization Course at the University of Porto and is currently pursuing a degree in Computer Engineering at Aberta University. Currently developing a health intervention, designed to enhance physical activity among healthcare professionals and foster healthier workplace environments.

**Ana Cecília Chaves** is medical doctor and is finishing her Public Health Specialization at the Local Health Unit of Gaia/Espinho. She completed a Postgraduate degree in Health Management, Executive Courses in Project Management, Negotiation and Leadership, and certifications as a DA Scrum Master and in Google Data Analytics. In 2024 she worked at Portugal’s Permanent Mission to the UN in Geneva. Currently, she is a researcher at the Department of Community Medicine, Information and Health Decision Sciences of the Faculty of Medicine of University of Porto (MEDCIDS), focusing on the use of large language models (LLMs) for Public Health Research.

**Teresa Leão**, MD, PhD. Assistant professor in Public Health, in the Faculty of Medicine of the University of Porto. Researcher in the EPIUnit, in in the intersection of social, commercial and political determinants of health.

1 EPIUnit - Instituto de Saúde Pública, Universidade do Porto, Rua das Taipas, n° 135, 4050-600 Porto, Portugal

2 Local Health Unit of Póvoa de Varzim/Vila do Conde, Póvoa de Varzim, Portugal

3 Local Health Unit of Gaia/Espinho, Vila Nova de Gaia, Portugal

4 Local Health Unit of São João, Porto, Portugal

5 Local Health Unit of Tâmega e Sousa, Marco de Canaveses, Portugal

6 Local Health Unit of Braga, Braga, Portugal

7 Local Health Unit of Nordeste, Bragança, Portugal

8 Local Health Unit of Matosinhos, Matosinhos, Portugal

9 Local Health Unit of Santo António, Porto, Portugal

10 Local Health Unit of Alto Minho, Viana do Castelo, Portugal

11 Local Health Unit of Região de Leiria, Leiria, Portugal

12 Laboratório para a Investigação Integrativa e Translacional em Saúde Populacional (ITR), Universidade do Porto, Rua das Taipas, n° 135, 4050-600 Porto, Portugal

13 Departamento de Ciências da Saúde Pública e Forenses, e Educação Médica, Faculdade de Medicina, Universidade do Porto, Alameda Prof. Hernâni Monteiro, 4200 Porto, Portugal

**Acknowledgements:** We acknowledge A Tomaz, D Lopes, G Monteiro, I Rosa, J Novais, P Florindo, R Ladeirafor their contributions to the analysis of the Portuguese health programmes. The preliminary results of this study were presented at the 2023 European Public Health Conference.

**Contributions**: TL: conceptualization (lead), results interpretation (equal), writing – original draft (equal), writing – review and editing (equal). DL, SC, LPG, SB, SS, AC, IMV, PO, MT, RB, AV, DC, and ACC: formal analysis (lead), results interpretation (equal), writing – original draft (lead), writing – review and editing (equal).

**Corresponding author:** Teresa Leão, Institute of Public Health of the University of Porto, Rua das Taipas, 135, 4050-600 Porto. E-mail: [teresa.leao@ispup.up.pt](mailto:teresa.leao@ispup.up.pt). Phone: +351[222061820](https://www.google.com/search?q=ispup&rlz=1C5CHFA_enPT1041PT1042&oq=ispup&gs_lcrp=EgZjaHJvbWUqCggAEAAY4wIYgAQyCggAEAAY4wIYgAQyDQgBEC4YrwEYxwEYgAQyBggCEEUYOzIGCAMQRRg7MgcIBBAAGIAEMgYIBRBFGDwyBggGEEUYPDIGCAcQRRg90gEIMzkwNmowajeoAgCwAgA&sourceid=chrome&ie=UTF-8)

**Ethic statement:** Not applicable

**ABSTRACT**

**Background:** Health planning is essential for effective public health interventions and optimal resource utilisation. The Portuguese General Directorate of Health has a long history of developing health plans and programmes, for communicable and noncommunicable diseases, and their determinants. This study aimed to review the current 24 programmes and assess the adequacy of their structure and content.

**Methods:** A document analysis was conducted using a programme assessment matrix developed by the research group. Two independent researchers evaluated each programme, scoring items as "absent," "present," or "not applicable." A quantitative analysis was employed to analyse compliance scores between priority and non-priority programmes and across the year of publication.

**Results:**  Of the 24 existing programmes, 16 complied with at least 75% of the predefined items. Priority programmes had an 83% global compliance score, surpassing non-priority programmes (with 33% of compliance). While the healthy eating programme achieved 100% compliance, the programme on sexual and reproductive scored the lowest (19%). The item least commonly present was “updated time scope”, in only 21% of the programmes. Most recently published programmes were more likely to have a higher compliance score (Β = 0.76, 95% CI: [0.46, 1.05]). Not all programmes were publicly available in the same digital location.

**Conclusions:** There was heterogeneity in the 24 health promotion programmes in terms of structure, content, timeliness, and accessibility. A standardised structure could enhance their quality and ease their interpretation and dissemination.

**HIGHLIGHTS**

* Health planning improves the effectiveness of public health interventions
* Portuguese national health programmes varied in structure and quality
* 23 out of 24 programs did not meet all criteria
* Having updated timelines and communication plans were the most common pitfalls

**Keywords:** Health planning, Document analysis, Portuguese health programmes, Planning framework

**BACKGROUND**

Health planning is essential to effectively respond to emerging global challenges - globalization, urbanization and population ageing – which contribute to the growth of chronic diseases and to the (re)emergence of communicable diseases, especially among individuals living in conditions of increased socioeconomic vulnerability1,2. As the costs of diagnosing and managing diseases escalate, health planning becomes crucial to efficiently improve population health​1​.

At the national level, health planning is essential for prioritizing countries’ primary health needs and directing resources appropriately​3​. It fosters collaboration among stakeholders, ensuring that interventions are both pertinent and effective. It also sets the stage for local initiatives, ensuring that local efforts are supported by and contribute to the nation's overarching health goals​3​. However, inadequately designed national health plans and programmes may lead to inefficiencies, unmet expectations and implementation failures at both national and local levels.

There are various frameworks to support health programmes' design. These delineate the steps to identify the needs of the population and healthcare organizations and set out effective health planning and implementation strategies1,3–6. Despite the various models, consensus can be found regarding the importance of considering the needs of the population, namely in terms of their magnitude, transcendence and vulnerability, inequities in its distribution, and, considering these data, stating specific, measurable, attainable, relevant, and time-defined goals5–8. Implementation-related elements, such as the identification of stakeholders and their specific roles, specific and evidence-based strategies and related activities, measurable monitoring and evaluation indicators, and an adequate communication plan, must be outlined1,5

The Portuguese General-Directorate of Health (GDH) has as mission to regulate, guide, and coordinate activities related to health promotion, health protection and disease prevention9. Consequently, this institution is responsible for the design of both the Portuguese National Health Plan and health-specific programmes9,10. These programmes are published by the GDH to guide the public, the private, and the third sectors on the promotion of health and healthy behaviours, and on the prevention and management of chronic and infectious diseases and of accidents and occupational diseases.

In 2012, eight priority programmes were launched, encompassing the following areas: diabetes, cerebro-cardiovascular diseases, oncological diseases, mental health, tobacco control, respiratory diseases, healthy nutrition, prevention and control of antimicrobial resistance and infections, and HIV/AIDS​11. In 2016, two more priority programmes were introduced, focusing on viral hepatitis and physical activity12​. To address other health problems demanding strategic planning and collaborative efforts, the GDH also developed non-priority health programmes.

Thus, nowadays 12 priority programmes can be found (Physical Activity13,14, Healthy Eating15, Smoking Control, Prevention and Control of Infection and Antimicrobial Resistance16, HIV and Sexually Transmitted Diseases17, Viral Hepatitis18, Tuberculosis17,19, Respiratory Diseases20, Cerebrocardiovascular Diseases21, Oncological Diseases22, Diabetes23, Mental Health24), as well as 12 non-priority programmes (Vaccination25, School Health26, Reproductive and Sexual Health27, Children and Adolescents Health28, Vision Health29, Oral Health30, Pain Prevention and Control31, Accidents Prevention31, Early Childhood Intervention32, Occupational Health33, Violence Prevention in the Life Cycle: Children and Youth at Risk32 and Violence Prevention in the Life Cycle: Health Sector34).

To the best of our knowledge, despite their long existence, no evaluation of the design of Portuguese GDH’s programmes has been performed until now, and the assessment of health programmes is rare. It remains unclear what are the most common pitfalls of health planning and programme design. Therefore, by performing a document analysis of all 24 Portuguese health programmes, we aimed to assess the adequacy of its structure and content, as a step to inform the design of future programmes.

**METHODS**

## Health Programmes´ Source and Retrieval

The National Health Programmes here analysed were listed on the Portuguese GDH website (<https://www.dgs.pt/> main menu). The latest publicly available versions were retrieved from the GDH website or, if not available, from other sources located through Google® search engine. The search and retrieval were first made in November 2022 and repeated in April 2023.

Most programmes were depicted in a single document. Exceptions were the Physical Activity and Tuberculosis programmes, dispersed across multiple documents but were analysed as one each13,14,17,19. The programme for Prevention of Violence in the Life Cycle was divided into three different topics32,34, as such, we considered it as three different programmes. As one of these three programmes was still in construction, it was excluded from the analysis. Therefore, we analysed a total of 24 programmes.

## Document Analysis

An assessment matrix was elaborated after literature review 1,3–6, upon group consensus, revising and combining the items listed in the literature.

This matrix consisted of a total of 21 items, spanned through seven dimensions and respective subdimensions: (1) *updated time scope*, (2) *rationale* (size of the health problem, vulnerability to intervention, social and demographic transcendence, characterization of existing inequities, and considerations about the results and pitfalls of previous programmes), (3) *goals’ definition* (considering its specificity, measurability, attainability, relevance, and time-definition), (4) *definition of strategies* (target population, consideration of equity in their design, articulation with other national programmes, identification of potential external stakeholders), (5) availability of *monitoring and/or evaluation indicators* and *data sources*, and (6) existence of a *communication plan*. Finally, as these programmes must be effectively communicated to the population and stakeholders, *document availability* was also included as an item.

Each programme was revised and assessed by two independent researchers following the analysis matrix. Each item was classified as “0” if absent, meaning having no mention whatsoever in the programme, and “1” if present, meaning that each programme score ranged from 0 to 21. Programmes’ scores were converted to percentages to better communicate the compliance of each programme.

Discrepancies in document analyses were discussed among the two researchers' team and, if not solved, they were brought to group discussion until a consensus was achieved.

## Quantitative Analysis

We performed a descriptive analysis of the global compliance scores and of the compliance by item. For the comparison of the mean global compliance scores between priority and non-priority programmes, a Mann-Whitney-U test was used, due to the non-normal distribution of the data.

A simple linear regression was employed to determine whether the year of publication predicted the score obtained by each programme [β and the respective 95% confidence interval (CI)].

The quantitative analysis was performed in SPSS® version 26 (IBM Corporation). The significance level was set at 5%.

**RESULTS**

## Global compliance

From the 24 programmes analysed, 14 complied with at least 15 (75%) of the predefined 21 items. The minimum global compliance score was 4 (19%), by the Sexual and Reproductive Health Programme, while the maximum was 21 (100%), by the Healthy Eating Programme. The median was 16 (76%) (Figure 1).

### Comparison of priority vs. non-priority programmes

Among the priority programmes, 10 (83%) met more than 75% of the items, while, among the non-priority programmes, only 4 (33%) reached this threshold. The median global compliance score for the "priority programmes", 76%, was significantly higher than the "non-priority programmes", 67%. Statistically significant differences were found between priority and non-priority programmes (p<0.01).

### Comparison across the year of publication

The year of publication of the programmes was positively associated with the global compliance score, with a yearly average increase of 0.76 in the programme score (95%CI: 0.46, 1.05). (Figure 2)

Uma imagem com texto, diagrama, Paralelo, captura de ecrã

Descrição gerada automaticamente

Figure 1 - Boxplot of Compliance Scores for All Programmes (Left), Priority Programmes (Middle), and Non-Priority Programmes (Right) across the 24 Portuguese National Health Programs.

Uma imagem com file, Gráfico, texto, diagrama

Descrição gerada automaticamente

Figure 2 - Association between the year of publication and programmes’ global compliance score across the 24 Portuguese National Health Programmes.

## Compliance by dimension

The compliance of these national health programmes, by dimensions (Tables 1 and 2), were the following:

1. **Updated time scope:** This dimension was not subdivided into subdimensions. This was the dimension with lowest compliance, being only compliant in 21% of the programmes (three of the priority and two of the non-priority ones).
2. **Rationale**: In the rationale, “inequity” was the subdimension most absent, being described in 54% of the programmes. Only 63% of the programmes considered in their rationale the results obtained in previous programmes. A discrepancy between priority and non-priority programmes was observed regarding this last subdimension , as it was fulfilled in 92% of the priority programmes compared to just 33% of the non-priority programmes. All other subdimensions, including the magnitude of the health problem, its vulnerability to intervention, and social and demographic transcendence, were addressed in most (88%) programmes.
3. **Goals:** Within this dimension, goals were defined in most programmes (92%). They showed relevance and attainability in 92% and 88% of the programmes, respectively. However, only 67% of the programmes included specific and time-defined goals, of which 92% referred to priority and 42% to non-priority programmes. Only 54% of the programmes provided measurable goals.
4. **Strategies:** Strategies were defined in most programmes (96%), making this the item with the highest compliance. The target population was identified in 92% of the programmes and 79% identified external stakeholders. In 67% of the programmes, it was shown an interest in integrating with other programmes. Overall, the subdimension least with lowest completion was “Equity,” considered in only 54% of the programmes.
5. **Evaluation:** Regarding this dimension, only 67% of the programmes presented monitoring and/or evaluation indicators and their data sources. Yet only half of the non-priority programmes presented this dimension (versus 83% of priority programmes).
6. **Communication plan:** This item was the second with the lowest compliance (25% of programmes). Communication plans were infrequently included in priority programmes (33%) and rarely included in non-priority programmes (17%).
7. **Document availability:** Only 63% of the programmes were available for consultation online, at the GDH website; all others were found using online search engines. It is relevant to point out that even though 15 programmes were present on the website, they were not always directly available through the programmes’ page.

*Table 1 – Compliance by item for All Programmes, Priority Programmes, and Non-Priority Programmes across the 24 Portuguese National Health Programmes.*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Items** | | **All Programmes** | **Priority Programmes** | **Non-Priority Programmes** |
| n (%) | n (%) | n (%) |
| **Time scope (defined and updated)** | | 5 (21) | 3 (25) | 2 (17) |
| **Rationale** | Size | 21 (88) | 12 (100) | 9 (75) |
| Vulnerability | 21 (88) | 11 (92) | 10 (83) |
| Transcendence | 21 (88) | 11 (92) | 10 (83) |
| Inequity | 13 (54) | 7 (58) | 6 (50) |
| Previous programme evaluation | 15 (63) | 11 (92) | 4 (33) |
| **Goals** | Any defined | 22 (92) | 12 (100) | 10 (83) |
| Specific | 16 (67) | 11 (92) | 5 (42) |
| Measurable | 13 (54) | 9 (75) | 4 (33) |
| Ambitious/ Attainable | 21 (88) | 12 (100) | 9 (75) |
| Relevant | 22 (92) | 12 (100) | 10 (83) |
| Time defined | 16 (67) | 11 (92) | 5 (42) |
| **Strategies** | Any defined | 23 (96) | 12 (100) | 11 (92) |
| Target-Population | 22 (92) | 10 (83) | 12 (100) |
| Equity | 13 (54) | 8 (67) | 5 (42) |
| Integration with other programmes | 16 (67) | 7 (58) | 9 (75) |
| Stakeholders | 19 (79) | 10 (83) | 9 (75) |
| **Evaluation** | Indicators | 16 (67) | 10 (83) | 6 (50) |
| Data sources | 16 (67) | 10 (83) | 6 (50) |
| **Communication plan** | | 6 (25) | 4 (33) | 2 (17) |
| **Availability on the GDH website** | | 15 (63) | 9 (75) | 6 (50) |

*Table 2 – Assessment matrix with the results from the analysis of the 24 Portuguese Health Programmes*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Rationale** | | | | | **Goals** | | | | | | **Strategies** | | | | | **Evaluation** | |  |  |  |  |
| **National Health Programme** | | **Time scope**  **updated** | Size | Vulnerability | Transcendence | Inequity | Previous programme evaluation | Any defined | Specific | Measureable | Attainable | Relevant | Time defined | Target-Population | Any defined | Equity taken into account | Integration with other programmes | Stakeholders | Indicators | Data sources | **Communication plan** | **Available on the GDH website** | **Global compliance score** | **Global compliance score (%)** |
| Healthy Eating † | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 21 | 100% |
| Physical Activity † | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 15 | 71% |
| Infection Control and Antimicrobial Resistance † | | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 16 | 76% |
| Tobacco Control † | | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 17 | 81% |
| Diabetes † | | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 18 | 86% |
| Brain and Cardiovascular Diseases † \* | | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 16 | 76% |
| Oncological Diseases † | | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 16 | 76% |
| Respiratory Diseases † | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 13 | 62% |
| Viral Hepatitis † | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 95% |
| Sexually Transmitted Infections and HIV † | | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 18 | 86% |
| Tuberculosis † | | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 16 | 76% |
| Mental Health † | | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 16 | 76% |
| Vaccination | | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 14 | 67% |
| Children's and adolescent's Health | | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 7 | 33% |
| Early Childhood Intervention | | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 10 | 48% |
| Sexual and Reproductive Health | | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 19% |
| Oral Health | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 18 | 86% |
| Occupational Health | | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 17 | 81% |
| School Health | | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 18 | 86% |
| Vision Health | | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 12 | 57% |
| Accident Prevention | | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 16 | 76% |
| Pain Prevention and Control | | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 14 | 67% |
| Prevention of Violence in the Life Cycle | Children and Young People at Risk | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 6 | 29% |
| Gender, Violence and the life cycle | NA (in progress) | | | | | | | | | | | | | | | | | | | | |  |  |
| Health Sector | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 14 | 67% |

*Footnote*: † Programme considered as a priority programme for the population’s health | 0 – absent | 1 – present | NA - not applicable

**DISCUSSION**

In this study, we found that, among the 24 Portuguese health programmes designed at the national level, there was moderate compliance with health planning quality criteria, with important lapses in its goals and strategies design, and a large variability of designs, structures and levels of detail. The lack of definition of a time scope (and its update) and measurable goals were common weaknesses, as were the non-definition of programmes’ strategies or the absence of concern about socioeconomic-related inequities. Integration with other related programmes was far from being complete, despite all being designed by GDH teams. Priority programmes were more frequently compliant with quality criteria, while non-priority programmes showed more numerous lapses.

The variability of the compliance of these programmes may be in part justified by the philosophy behind them: while some programmes can be more easily framed as health promotion programmes with population health approaches, others have high-risk strategies, more focused on clinical approaches, exhibiting structures more akin to clinical guidelines. The clinical orientation of these programmes may narrow the scope of potential community-based interventions, and the indicators developed within mimic indicators contracted by family health units as indicators of performance.

The fact that the year of publication was a predictor of the programmes’ scores, may demonstrate gradual improvements their design and structure. However, it must be noted that most programmes did not define a time scope or were not updated. Despite being probably due to several factors, such as the COVID-19 pandemic, the reorganization of the public health institutions, or the recent years’ political instability that may have affected the GDH functioning, the effectiveness of their action depends on the timely revision of needs, goals, and strategies.

In this context, and considering the existing discrepancies, there seems to be a need to analyse whether some of the older and non-priority programmes should continue to be classified as programmes, restructured to better answer to populations’ needs or refocused as technical advisory teams producing guidance for best clinical practices. It must be made clearer what defines a programme as priority or non-priority, and regarding what this classification means for the planning and subsequent implementation of these programmes. If programmes continue to be relevant, there is a pressing need for their revision, to ensure they are updated, and its structures follow the quality criteria for the design of health programmes.

Firstly, for future clarity, consistency, and articulation across programmes, common quality criteria and structure for the health programmes could be designed and applied within the institution. A focus on the monitoring of progress is needed, with the definition of specific and measurable objectives35. Secondly, it is important that the design of these programmes objectives is aligned with the health priorities and the objectives of the National Health Programme

There also is a clear need for improved coordination across health programmes. Enhancing integration is imperative to foster a more effective and sustainable approach in health planning, implementation, and reporting36. The current gap in integration with other GDH programmes poses significant risks, particularly in the articulation of goals and strategies36. The high percentage of programmes engaging with external stakeholders may reflect a strategic orientation toward building partnerships and foster community participation. Yet, this articulation with external actors can be hindered by the absence of consistency in terms of programmes’ communication.

Thirdly, communication plans must be included, for agile internal and external communication and cooperation. These were absent from several programmes and, importantly, about half of these documents could not be found on the GDH webpage. The absence of a communication plan can damage the implementation of the programme, as internal and external stakeholders lack information and guidance, subjecting themselves to an ineffective dissemination of its goals and results. This is of special relevance as these are national-level programmes, which need local-level implementation from actors of the health sector and support from other sectors, namely the education sector and the local government, and stakeholders’ engagement in the several phases of the programme may be fostered by their inclusion in communication plans. The absence of a communication plan can make the monitoring process less transparent and more dependent on those involved in the implementation and evaluation to answer for accountability. As a result, those involved in the implementation of local projects may be less motivated to participate due to the lack of feedback on their work and lack of support. Furthermore, it should be noted that these programmes depend on the political recognition of their relevance, which can be hindered by communication weaknesses.

Finally, the definition of processes of evaluation of these programmes can be improved. In the programmes here analysed, evaluation processes were either undefined or focused on assessing if targets were met. The effectiveness of a programme’s implementation is profoundly affected by its initial planning stages, namely by the definition of goals, targets, and evaluation processes. Other evaluation frameworks, such as the LeaDER evaluation framework, can provide a broader and more holistic understanding38,39. This framework can be used to better inform about the impact of the intervention, determine how and where they are achieving their aims, using a before-during-after approach for analysis, and combining quantitative and qualitative methods.

Previous analyses of health programmes commonly assess their effectiveness rather than their structure. Evaluating the structure of programme reports can be beneficial, as it may allow for the identification of missing planning elements that contribute to failures in evaluation and implementation. For example, as shown, SMART goals are still far from prevailing in these health programmes, especially in what concerns the definition of measurable goals or the time scope to observe the outcomes of its implementation. Similarly, the description of socioeconomic disparities in the distribution of the health problem or expressed concerns in the reduction of health inequities are still rare, even in programmes designed by experienced teams from a national-level institution. Indeed, having a structured framework supporting the design of these programmes can promote its more efficient communication, articulation, implementation, and outcomes assessment. This document analysis has several strengths: it provides an in-depth analysis of 24 national-level health promotion programmes, identifying potential limitations and proposing recommendations for higher consistency, coherence, effectiveness, and equity. It considered the literature on health planning and the WHO’s perspective to review national health programmes. This analysis is concurrent with the health care reform taking place in Portugal and the work carried out in recent years to reorganize the Public Health workforce and institutions, being potentially useful in identifying gaps and possible points of improvement of health planning processes to achieve greater efficiency not only from these programmes’ perspective but also of the NHS as a whole.

Also, in alignment with the WHO system-wide approach38, it is important to acknowledge that individual health programmes, even when well managed and implemented, run the risk of duplicating or misaligning responsibilities with one another or with the rest of the health system, imposing high costs when viewed from a wider perspective. This planning model, based on vertical programmes with their own funding, has a history of allocating greater funding to specific pathologies to the detriment of areas related to the determinants of health and whose gains could not only be greater, but also be transversal to a range of other pathologies.39 It will therefore be important to align individual programmes with a macro vision of the health system and its components, ideally articulated with other programmes and the National Health Plan.

Some limitations should be acknowledged. First, the analysis of these programmes has a subjective component. To ensure consistency of the evaluation across different programmes, two authors independently analysed each programme, and divergences were solved in group discussions. Second, in some programmes several documents could have been consulted, namely reports but, to ensure comparison across programmes, we restricted the analysis to the information contained in the most recent programme documents. Third, the assessment matrix for evaluating each of the programmes was elaborated by the research team; it is possible that it could be differently formulated by other authors, with further dimensions included. Yet, it was based on the literature created by the WHO1, 7-8 and other relevant authors organizations2-6. Fourth, a qualitative analysis of the quality of each programme and its dimensions and subdimensions could allow a more detailed understanding of the limits of these documents; still, to ensure a systematic approach to the analysis and its readability, we focused on analysing whether dimensions and its subdimensions were included in the document.

# CONCLUSIONS

The analysis of the structure and content of national-level health promotion programmes shows some pitfalls prevail in health programmes designed at national level.

Epidemiological data on equity and strategies targeting its tackling are present, as are limitations on the definition of goals, strategies and evaluation processes. Communication plans are also absent. Non-priority and older programmes tend to present lower compliance scores, calling for an unified guidance. There are opportunities to improve programmes’ design, namely standardizing its structure, making cross programme articulation more likely, and fostering its effectiveness and sustainability.

The findings are particularly relevant in Portugal, where there is an ongoing health sector reform and, specifically, of the public health structure. These findings may, thus, provide a first step towards the development of programme audits and to the continuous improvement of current and future health promotion programmes.

# REFERENCES:

1. World Health Organization. *Strategizing National Health in the 21st Century: A Handbook*.; 2016. https://apps.who.int/iris/handle/10665/250221

2. Labonté R, Mohindra K, Schrecker T. The growing impact of globalization for health and public health practice. *Annu Rev Public Health*. 2011;32:263-283. doi:10.1146/annurev-publhealth-031210-101225

3. Harrison JP. *Essentials of Strategic Planning in Healthcare*. (John Cantiello, Nailya DeLellis, Tina DiFranco, et al., eds.). Foundation of the American College of Healthcare Executives; 2021.

4. National Association of County and City Health Officials. Developing a Local Health Department Strategic Plan: A How-To Guide. Published online 2010. Accessed January 19, 2024. https://www.naccho.org/uploads/downloadable-resources/Programs/Public-Health-Infrastructure/StrategicPlanningGuideFinal.pdf

5. Frieden T. Six Components Necessary for Effective Public Health. *Am J Public Heal*. 2014;104(1). doi:10.2105/AJPH.2013.301608

6. Imperatori E, Giraldes M do R. *Metodologia Do Planeamento Em Saúde*.; 1982.

7. World Health Organization. *Implementation Research Toolkit*.; 2014.

8. World Health Organization. *Innov8 Approach for Reviewing National Health Programmes to Leave No One behind: Technical Handbook*.; 2016.

9. Diário da República. *Decreto Regulamentar n.o 14/2012, Série I*.; 2012:480-482.

10. DGS. Plano Nacional de Saúde 2021-2030. Saúde sustentável: de tod@s para tod@s. *Direção-Geral da Saúde*. Published online 2022:121. https://pns.dgs.pt/files/2022/12/PNS2021-2030\_FINAL-para-Edicao.pdf

11. Despacho n.o 404/2012. Diário da República, 2.a série - n.o 10 (13-01-2012). Published online 2012:1341-1342. http://sanchoeassociados.com/DireitoMedicina/Omlegissum/legislacao2012/Janeiro/Desp\_404\_2012.pdf

12. DRE. Despacho n.o 6401/2016 do Gabinete do Secretário de Estado Adjunto e da Saúde. *Diário da República, 2a Série, No 94, 16 maio 2016*. Published online 2016:15239. https://dre.pt/application/file/74443337

13. Silva M, Mendes R, Marques A, et al. *Programa Nacional Para a Promoção Da Atividade Física*.; 2022.

14. Silva P, Graça P, Mata F, Arriaga M, Silva A. *Estratégia Nacional Para a Promoção Da Atividade Física, Da Saúde e Do Bem-Estar*.; 2016. Accessed January 19, 2023. https://www.dgs.pt/documentos-e-publicacoes/estrategia-nacional-para-a-promocao-da-atividade-fisica-da-saude-e-do-bem-estar-pdf.aspx

15. Ministério Da Saúde. Direção-Geral da Saúde. *Programa Nacional Para a Promoção Da Alimentação Saudável 2022-2030* .; 2022. Accessed January 19, 2024. https://nutrimento.pt/activeapp/wp-content/uploads/2023/03/DGS\_PNPAS\_202230\_02\_03\_23.pdf

16. Lebre AI, Alves A, Félix AM, et al. *Programa de Prevenção e Controlo de Infeções e de Resistência Aos Antimicrobianos*.; 2017. www.dgs.pt

17. Ministério da Saúde. Direção-Geral da Saúde. *Programa Nacional Para a Infeção VIH, Sida e Tuberculose 2017*.; 2017. Accessed January 19, 2023. https://www.pnvihsida.dgs.pt/wwwbase/raiz/Erro.aspx?aspxerrorpath=/estudos-e-estatisticas111111/relatorios1/programa-nacional-para-a-infecao-vih-sida-e-tuberculose-2017-pdf.aspx

18. Ministério da Saúde. Direção-Geral da Saúde. *Programa Nacional Para as Hepatites Virais 2022*.; 2022. Accessed January 19, 2023. https://www.chlc.min-saude.pt/wp-content/uploads/sites/3/2017/10/DGS\_PNDCCV\_VF.pdf

19. *Tuberculose Em Portugal: Desafios e Estratégias*.; 2018.

20. Nunes E, Gato I. *Programa Nacional Para a Prevenção e Controlo Do Tabagismo*.; 2020. Accessed January 19, 2023. https://www.dgs.pt/portal-da-estatistica-da-saude/diretorio-de-informacao/diretorio-de-informacao/por-serie-1219790-pdf.aspx?v=%3D%3DDwAAAB%2BLCAAAAAAABAArySzItzVUy81MsTU1MDAFAHzFEfkPAAAA

21. Cruz Ferreira R, Espiga de Macedo M, Pinto F, César das Neves R, Andrade C, Santos G. *Programa Nacional Para as Doenças Cérebro-Cardiovasculares*.; 2017. Accessed January 19, 2023. https://www.chlc.min-saude.pt/wp-content/uploads/sites/3/2017/10/DGS\_PNDCCV\_VF.pdf

22. Miranda N, Brito Gonçalves M, Santos G, Andrade C. *Programa Nacional Para as Doenças Oncológicas 2017*.; 2017. Accessed January 19, 2023. https://comum.rcaap.pt/bitstream/10400.26/22531/1/Programa Nacional para as Doenças Oncológicas 2017.pdf

23. Valadas C, Costa J, Cabral A, Sabino F, Andrade C, Santos G. *Programa Nacional Para a Diabetes*.; 2017.

24. de Carvalho Á, Xavier M, Domingos P, Almeida C, Pires P, Szabzon F. *Programa Nacional Para a Saúde Mental 2017*.; 2017. Accessed January 19, 2023. https://www.fnerdm.pt/wp-content/uploads/2014/05/DGS\_PNSM\_2017.10.09\_VF.pdf

25. Direção Geral da Saúde. *Norma 018/2020 - Programa Nacional de Vacinação*.; 2020. www.dgs.pt

26. Paixão von Amann G, Monteiro H, Leal P, et al. *Programa Nacional de Saúde Escolar 2015*.; 2015. Accessed January 19, 2023. https://www.dgs.pt/directrizes-da-dgs/normas-e-circulares-normativas/norma-n-0152015-de-12082015-pdf.aspx

27. Órfão A, Leça A, Henriques A, et al. *Programa Nacional de Saúde Reprodutiva*.; 2008. Accessed January 19, 2023. https://www.spdc.pt/files/publicacoes/11230\_2.pdf

28. Menezes B, Oliveira D, Sassetti L, et al. *Programa Nacional de Saúde Infantil e Juvenil*.; 2013. Accessed January 19, 2023. https://www.dgs.pt/directrizes-da-dgs/normas-e-circulares-normativas/norma-n-0102013-de-31052013-jpg.aspx

29. *Programa Nacional Para A Saúde Da Visão – Revisão e Extensão 2020*.; 2020. Accessed January 19, 2023. https://www.dgs.pt/documentos-e-publicacoes/programa-nacional-para-a-saude-da-visao-pdf.aspx

30. Azul A, do Céu A, Ferreira CS, Jordão M. *Programa Nacional de Promoção Da Saúde Oral 2021-2025*.; 2021. Accessed January 19, 2023. https://ucccb.pt/wp-content/uploads/2021/10/programa-nacional-de-promocao-da-saude-oral-2021-2025.pdf

31. *Programa Nacional Para a Prevenção e Controlo Da Dor*.; 2017. Accessed January 19, 2023. https://www.aped-dor.org/documentos/DGS-Programa\_Nacional\_para\_a\_Prevenção\_e\_Controlo\_da\_Dor\_-\_2017.pdf

32. Jorge A, Leça A, Perdigão A, et al. *Maus-Tratos Em Crianças e Jovens. Intervenção Da Saúde - Documento Técnico*.; 2007. Accessed January 19, 2023. https://www.dgs.pt/accao-de-saude-para-criancas-e-jovens-em-risco/ficheiros-externos/doc-doc-tecnico-maustratoscj\_intervencaosaude-pdf.aspx

33. Rocha Nogueira J, Moreira S, Nunes C, Rasteiro E, Ramalho F. *Programa Nacional de Saúde Ocupacional (PNSOC) – Extensão 2018/2020*.; 2018. Accessed January 19, 2023. https://www.dgs.pt/saude-ocupacional/documentos-so/pnsoc-extensao-pdf.aspx

34. Biscaia A, Machado D, Oliveira D, Menezes MB, Silva M. *Programa Nacional de Prevenção Da Violência No Ciclo de Vida - Manual Para a Implementação Do Plano de Acção Para a Prevenção Da Violência No Setor Da Saúde*.; 2022.

35. Suter E, Oelke ND, Adair CE, Armitage GD. *Ten Key Principles for Successful Health Systems Integration*. http://www.calgaryhealthregion.ca/hswru/.

36. Suter E, Oelke ND, Adair CE, Armitage GD. *Ten Key Principles for Successful Health Systems Integration*; 2009. http://www.calgaryhealthregion.ca/hswru/.

37. WHO-EURO. WHO Evaluation of the National Health Plan of Portugal (2004–2010). Published online 2010:42.

38. Sparkes S., Durán A., Kutzin J. *A system-wide approach to analysing efficiency across health programmes*. Geneva: World Health Organization; 2017. (Health Financing Diagnostics & Guidance No 2) Licence: CCBY-NC-SA 3.0 IGO; http://apps.who.int/iris/bitstream/10665/254644/ 1/9789241511964-eng.pdf.

39. Cortes, M. *The health status of the population in Portugal: an overview.* Sociologia, Problemas e Práticas [Online]; 2016. https://doi.org/10.7458/SPP2016807850