



DELIVERABLE NO. 3.2 COMPARATIVE STUDY OF PRIMARY PREVENTION STRATEGIES, HEALTH PROMOTION AND CAMPAIGNS

WP 3. Benchmarking of stroke care plans

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Deliverable description:

This document aims to offer a descriptive analysis of the different strategies of primary prevention through healthy lifestyle campaigns and awareness of stroke currently set up in the ICTUSnet regions.

Revision history

Version	Date	Comments	Partner
V0	July 2019	Structured of the document	Fictus-AQuAS
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ABBREVIATIONS AND

AF	Atrial Fibrillation
AQuAS	Agència de Qualitat i Avaluació Sanitàries de Catalunya
ARS	Agence Régionale de Santé
ARSN	Administração Regional de Saúde do Norte, I.P.
BMI	Body mass index
CEI-IB	Ethical Committee of Research of the Balearic Islands
CHA2DS2VASc	Congestive heart failure, Hypertension, Age ($\geq 65 = 1$ point, $\geq 75 = 2$ points), Diabetes, and Stroke/TIA (2 points). VASc stands for vascular disease (peripheral arterial disease, previous MI, aortic atheroma)
CHUM	Centre hospitalier Universitaire de Montpellier
CHUT	Centre Hospitalier Universitaire de Toulouse
CICAT	Registry of “Codi Ictus Catalunya”
DGS	Direção Geral de Saúde
EC	European Commission
EDADES	Survey on alcohol and other drugs in Spain
EEA	European Economic Area
ERDF	European Regional Development Fund
ESO	European Stroke Organization
ESTUDES	Survey on drug use in secondary education in Spain
EU	European Union
EVT	Endovascular treatment
Fictus	Fundació Ictus
FMS	Navarrabiomed- Fundación Miguel Servet
GCP	Good Clinical Practice
GDPR	General Data Protection Regulation
IACS	Instituto Aragonés de Ciencias de la Salud
ICTUSnet	Acronym of the Project <i>“Excellence network for the development and implementation of innovative models for Ictus integrated attention.”</i>
IdISBa	Fundación Instituto de Investigación Sanitaria Illes Balears
INE	Spanish National Institute of Statistics
IVT	Intravenous thrombolysis

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NCDs	Non-Communicable Diseases
NHS	National Health System
OE	Open Evidence
PADRS	Public Data Analysis for Health Research and Innovation Program
PNNS	Programme national nutrition Santé
SAFE	Stroke Alliance For Europe
WHO	World Health Organization

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EXECUTIVE SUMMARY

The present document aims to describe the current situation regarding different strategies of primary prevention (through healthy lifestyle campaigns) and awareness of stroke currently set up in the ICTUSnet regions and suggest recommendations to be implemented to improve the strategies, from a regional perspective.

This document is addressed mainly to stakeholders related with primary prevention and awareness campaigns in stroke.

The present deliverable is in line with the recommendations described in the Evaluation Framework (deliverable 3.1), section 3 “Evaluation framework for primary prevention and awareness campaigns in stroke” and collects the information obtained through a wide review of the literature and official documents, besides information supplied by healthcare professionals and stroke patients associations from the participant regions.

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1. OVERVIEW

The increasing burden and costs associated with stroke care all point towards the pressing need for effective measures of stroke prevention.

In the former deliverable, “Evaluation Framework” (D3.1), we defined specific selected strategies, their targets and indicators.

We focused on the following strategies:

1. Encourage healthy lifestyles and stroke awareness
2. Detection and treatment of hypertension
3. Detection and treatment of atrial fibrillation

1.1. Encourage healthy lifestyles and stroke awareness

Among the potentially modifiable risk factors for stroke we found hypertension, poor dietary and physical activity habits, tobacco, alcohol, diabetes, obesity and dyslipidemia, cardiac causes, psychosocial stress, socioeconomic status, air pollution and rapid weather changes. Besides, most countries in Europe have undertaken regional or national educational campaigns aimed at raising awareness on stroke risk factors and healthy lifestyles often combined with campaigns to increase public knowledge of stroke symptoms and the appropriate response after symptoms onset.

In D3.1, we propose the following targets:

- For healthy lifestyles (according to WHO’s Department for prevention of Non-Communicable diseases (NCDs)):
 - Tobacco control: A 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years.
 - Promoting a healthy diet: A 30% relative reduction in mean population intake of salt/sodium.
 - Physical inactivity: A 10% relative reduction in prevalence of insufficient physical activity.
 - Harmful use of alcohol: At least 10% relative reduction in the harmful use of alcohol, as appropriate, within the national context.
- For stroke awareness campaigns:
 - Avoidance of delay in seeking medical attention, and consequently being potentially treated

And the following indicators:

- For healthy lifestyles:

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Risk factor	Structural indicators	Output indicators
Tobacco use	<ul style="list-style-type: none"> ▪ Number of regional specific campaigns addressing risk factors (per year) ▪ Number of specific regional/national policies regulating risk factors ▪ Number of programs promoting healthy life style ▪ Number of programs that prevent and treat risk factors 	<ul style="list-style-type: none"> ▪ Prevalence of current tobacco use among adolescents ▪ Age-standardized prevalence of current tobacco use among persons aged 18+ years
Poor diet		<ul style="list-style-type: none"> ▪ Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
Physical inactivity		<ul style="list-style-type: none"> ▪ Prevalence of insufficiently physically active adolescents, defined as less than 60 minutes of moderate to vigorous intensity activity daily ▪ Age-standardized prevalence of insufficiently physically active persons aged 18+ years (defined as less than 150 minutes of moderate-intensity activity per week, or equivalent)
Alcohol intake		<ul style="list-style-type: none"> ▪ Total (recorded and unrecorded) alcohol per capita (aged 15+years old) consumption within a calendar year in litres of pure alcohol, as appropriate, within the national context ▪ Age-standardized prevalence of heavy episodic drinking among adolescents and adults, as appropriate, within the national context ▪ Alcohol-related morbidity and mortality among adolescents and adults, as appropriate, within the national context

- For campaigns:

	Structural indicators	Output indicators
Stroke awareness campaign	Number of regional campaigns per year	<ul style="list-style-type: none"> ▪ Number of viewers/receptors ▪ Time from stroke onset to first seeking medical attention ▪ Nature of the first medical attention sought and recipient of initial alert (Emergency Medical Services, general practitioners, etc.) ▪ Percentage of patients arriving within 4.5h symptoms onset

1.2. Detection and treatment of hypertension and atrial fibrillation

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In the Evaluation Framework, we wanted to emphasize campaigns related with the two main risk factors, hypertension and atrial fibrillation.

The targets and indicators for hypertension proposed were:

- A 25% relative reduction in the prevalence of raised blood pressure or contain the prevalence of raised blood pressure according to national circumstances.
- An 80% availability of the affordable basic technologies (blood pressure measurement devices) and essential medicines, including generic drugs, required to treat hypertension.
- Having blood pressure detected and controlled in 80% of persons with hypertension.
- The diagnosis of hypertension should be confirmed at 1 to 4 weeks after the first measurement. In general, hypertension is diagnosed if, on two visits on different days
 - o systolic blood pressure (SBP) on both days is ≥ 140 mmHg and/or
 - o diastolic blood pressure (DBP) on both days is ≥ 90 mmHg.

Risk factor	Structural indicators	Output indicators
Hypertension	<ul style="list-style-type: none"> ▪ Number of regional specific campaigns per year ▪ Number of programs promoting healthy lifestyle ▪ Number of programs that prevent and treat hypertension ▪ Availability and affordability (independently) of quality, safe and efficacious essential hypertension medicines, including generics, and basic technologies in both public and private facilities 	<ul style="list-style-type: none"> ▪ Age-standardized prevalence of high blood pressure among persons aged 18+ years ▪ Percentage of patients with hypertension under lowering blood pressure medication ▪ Percentage of patients with controlled blood pressure ▪ Percentage of facilities where to measure blood pressure

And the targets and indicators for atrial fibrillation were:

- Among elderly population with hypertension and a least one other risk factor for AF, they will detect AF in at least **10%** of patients who would be potential candidates for anticoagulant therapy.
- In people with AF with an appropriate CHA2DS2VASc score, the beneficial effect of anticoagulation is evident. The goal is to treat the majority of patients with AF, avoiding overtreatment in low risk patients.

Risk factor	Structural indicator	Output indicator
Atrial fibrillation	<ul style="list-style-type: none"> - Number of regional specific campaigns per year 	<ul style="list-style-type: none"> - Age-standardized prevalence of detected AF among screened persons aged 65+ years

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		- Adults with atrial fibrillation at increased risk of stroke (according to CHA2DS2VASc score) are treated appropriately with anticoagulants
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2. METHODOLOGY

Our aim was to collect information from all the targets and indicators proposed in the above mentioned Evaluation Framework (deliverable 3.1). We performed a review of relevant literature and documents related to primary prevention and awareness campaigns in every ICTUSnet region using free search engines (i.e. Pubmed, Chrome) and the following key words (in English and in Spanish, Catalan, French, Portuguese): “stroke plans/programs”, “non-communicable-disease plans/programs”, “primary prevention campaigns”, “cardiovascular risk factors”, “high blood pressure/hypertension”, “atrial fibrillation”, “awareness campaigns” plus each region of interest (Occitane, North of Portugal, Aragon, Balearic Island, Navarre, Catalonia). We also collected information from unstructured interviews with different stakeholders from the 6 SUDOE regions.

We checked if the recommendations / current strategies were in line with the European Stroke Action Plan 2018-2030, with the indicators proposed by SAFE, the WHO’s Department for prevention of NCDs framework and the 2030 Agenda for Sustainable Development (SDG 3, Ensure healthy lives and promote well-being for all at all ages). We also checked if the programs/strategies of the regions followed the good and best practices that have been selected by actions funded under the European Commission Health Programmes (<https://webgate.ec.europa.eu/dyna/bp-portal/>).

To analyse if the strategies have a general or specific (were tailored taking into account the characteristics of the population) approach, we also consulted data from the Institute for Health Metrics website <http://www.healthdata.org/>, the Eurostat report for cardiovascular diseases (2015)¹ and regional health surveys.

To facilitate the comprehension of the information obtained, we divided the content of the section “results of healthy lifestyle, hypertension and atrial fibrillation campaigns” into the following questions:

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Does the region have updated Health Programs/Plans containing healthy lifestyle/hypertension/atrial fibrillation strategies? Do they have available documents?

Do they have specific programs to address primary prevention in Stroke? Is there any specific section for evaluation?

Which is the approach of the objectives regarding healthy lifestyle campaigns? (Is this general or do they consider the characteristics of the region)

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3. RESULTS OF HEALTHY LIFESTYLES, HYPERTENSION AND ATRIAL FIBRILLATION CAMPAIGNS BY REGION

3.1. Does the region have updated Health Programs/Plans containing healthy lifestyle/hypertension/atrial fibrillation strategies? Do they have available documents?

3.1.1. Northern region of Portugal

There are different national plans (Planos Nacionais, PN) that address healthy diet, physical activity and tobacco use to the general population. These Plans are promoted directly by the Portuguese Health Ministry (Ministério da Saúde. Direção-Geral da Saúde, DGS) and can be consulted by clicking the following links:

- Healthy diet: <http://www.alimentacaosaudavel.dgs.pt/>
- Physical activity: <https://www.dgs.pt/programa-nacional-para-a-promocao-da-atividade-fisica/ficheiros-externos-pnpaf/recursos-ferramentas-ab-pdf.aspx>
- Tobacco Use: <https://www.dgs.pt/programa-nacional-para-a-prevencao-e-controlo-do-tabagismo/quer-deixar-de-fumar.aspx>

Portugal, with one of the highest alcohol consumption and prevalence of Alcohol Related Problems (ARP), among the European Union Member States was integrated in the general European policy for the control of alcohol (PLA for better individual and community health).

In 1984 Portugal joined the European Technical Cooperation Program for the Prevention of ARP and adopted the European Charter on Alcohol, approved at the Paris Conference in 1995, with dissemination of has been part of the Health Promotion and Education Program integrated in the National Plan Against Alcoholism, recently approved. For this purpose, the DGS published in 2001 a manual for students and health professionals.

At a regional level, the latest regional health plan (2014-2016; http://www.arsnorte.min-saude.pt/wp-content/uploads/sites/3/2019/10/PlanoRegionalSaudeNorte_2014_2016.pdf), later extended to 2020, considered cerebrovascular diseases as one of the five main health problems of the Northern region of Portugal. Different approaches and programs were proposed to tackle health determinants, including:

- Tobacco-Free Schools Program;
- Healthy Eating in School Health Program;

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- Trails Program and Prevention Service;
- Specific surveillance primary health care visits to health determinants.

Among stroke health determinants, there were specific goals for the reduction of hypertension, tobacco and alcohol consumption, obesity and physical inactivity, some of them mainly targeted to children.

In fact, the strategical regional plan for the Northern Regional Health Administration (2017-2019; http://www.arsnorte.min-saude.pt/wp-content/uploads/sites/3/2018/01/Plano_Estrategico_ARSN_2017-2019.pdf) is aligned with the regional health plan and tackles the different health determinants for stroke, including the strengthening of primary health care (whose services are evaluated also through hypertension management).

In the context of World Hypertension Day, the Portuguese Society of Hypertension, different Hospital and Health Centers, among other entities, promote annually awareness actions and free health screenings for the population.

There are no official national/regional programmes for Atrial Fibrillation. However, there is an association (AFA) (<http://www.heartrhythmalliance.org/afa/pt>), as part of an international charity that provides information and support for patients suspected of having, or diagnosed with atrial fibrillation (<http://www.heartrhythmalliance.org/afa/uk/>). This association and its campaigns are supported by SAFE (Stroke Alliance for Europe). In 2017, they launched an international campaign “Conheça a sua pulsação” coinciding with the World Heart Rhythm Week (from July, 5th to 17th).

3.1.2. Occitane

This French region is involved in national and regional health lifestyle plans.

The national health nutrition plan created in France in 2001 provides the reference framework for food and physical activities. It serves as support for the actions carried out in the region. The "PNNS" (Programme national nutrition Santé) logo is used to authenticate all the actions, measurements, messages and tools of the program. The promotion of healthy eating and regular physical activity is integrated into the National Health Strategy (NHS) 2018-2022.

The ARS Occitanie has the regional plan "Sport, Health, Well-being" (2019-2024). This responds to an inter ministerial will between Ministries in charge of Social Affairs and Health and Sports,

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Youth, Popular Education and Community Life. There are other several initiatives to promote physical activity through this program, like “Active cities” and “Active Departments”.

There are several initiatives to promote physical activity through this program, like “Active cities” and “Active Departments” labels. In 2018, there were 76 active PNNS communities for which the application for signature is underway in Occitania: 58 municipalities, 16 communities of communes, 1 country and 1 department (the Gers) have adhered to the PNNS charter and are committed to take action to promote a balanced diet and regular physical activity among their constituents. In these last programs, there is also a predefined evaluation, a steering committee to monitor this Program, working groups and regional technical committees to implement the Program (currently in progress). The presentation of the results is not scheduled.

The ARS Occitanie has set up prevention programs for addictions (including alcohol), focusing primarily on young people but also on adults. On the festive scene, actions both in urban areas (downtown with bars), rave parties or student parties, including the peer-to-peer intervention approach, with young people trained have been developed. These experiences capitalized and used in the context of the Euro 2016 football tournament (Toulouse, Montpellier and other major cities). Currently, in addition to the prevention programs developed in the region, the ARS relies on its network of actors in the medico-social system.

The first National Tobacco Reduction Program (NRPP) was launched in September 2014, as part of the 2014-2019 Cancer Plan, many of the emblematic actions were carried out from 2014 until 2019 NRPP (neutral package, Tobacco Free Month, prescription authorization for new professions, notification of the characteristics of tobacco products, tobacco transparency, etc.) To support this ambitious policy, the Minister of Solidarity and Health launched in the spring of 2018, as part of the National Public Health Plan and, with the Minister of Public Accounts and Action, the national program to fight against tobacco (PNLT) for the years 2018 to 2022.

3.1.3. Balearic Island

The Health Ministry of Balearic Islands launched in 2015 a strategic health Plan (Pla Estratègic 2016-2020, Conselleria de Salut de les Illes Balears) after analyzing its critical situation after years of divestment. One of the main axis was to promote **healthy eating and active life** through the campaign Mediterranean flavor (“Sabor Mediterrani”), where organizations get the label “Sabor Mediterrani” and the Mediterranean diet is promoted in educational and health centers (2017-2019). During 2017, the Health Ministry worked alongside with the Balearic Tourism Agency within the framework of the Gastronomic Product Club to promote the project. In

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addition, a Mediterranean diet recipe book was finalized with the College of Nutritionist Dietitians and with the research team PREDIMED and UNESCO that was published in 2018.

There is also a program named “Healthy routes” (“Rutas Saludables”) to promote physical activity. Healthy routes have also been promoted through the Nordic Walking Healthy project, in collaboration with the Municipal Institute of Sport (IME) of the City Council of Palma. The project includes the practice of Nordic walking using healthy routes as a circuit with the support of health centers. Besides, the Health Promotion Service coordinates the Health Promotion Educational Centers (CEPS) Program, in collaboration with the Ministry of Education, to promote that the entire educational community adopts healthy lifestyles in a health-friendly environment (<http://e-alcavac.caib.es> and www.estilosdevidasaludable.mssgi.gob.es).

The fight against **smoking** is one of the priorities established by the General Directorate of Public Health and Participation. At the end of 2015, a group of experts (Primary Care, Specialized Care and Central Services Health Service professionals and technicians from the General Directorate of Public Health and Participation) and a working group (technicians from the Health Promotion, Disease Prevention, Drug Coordination, Environmental Health and Health Protection Department) developed a series of prevention, promotion and intervention actions.

Tobacco program group experts (Primary Care, Specialized Care and Central Services Health Service professionals and technicians from the General Directorate of Public Health and Participation) and a working group (technicians from the Health Promotion, Disease Prevention, Drug Coordination, Environmental Health and Health Protection Department) developed a series of prevention, promotion and intervention actions (Education Centers: “Bon dia Salut”, Primary Care offices: workshops, Contest for Tobacco Posters, .

As part of the Addiction and Drug Addiction Plan of the Balearic Islands (PADIB), there is a program and a catalog to address addictions, with a main focus on smoking and cannabis consumption. The catalog is divided into 5 areas of intervention (Educational, Family, Community, Leisure and Work).

In February 2018, a committee of experts on the consumption of alcohol risk and alcohol abuse disorders was created, formed by professionals and technicians of primary care, addictive behaviors (UCA) units, of the units for patients related to alcohol (UPRA), the PADIB and the Health Service. This Commission is in charge of preparing and disseminating information material and organizing training aimed at professionals and activities to raise awareness among the population.

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The Primary Care Management of Mallorca marked in the early 2019 as one of the important strategic lines the improvement of the resolution capacity of its teams to monitor arterial hypertension. After detecting the need to improve the provision of ambulatory blood pressure monitoring devices (ABPM), 101 new ABPMs were purchased, which are currently being distributed to health centers and basic units of the island. The purpose is to make possible the diagnosis of arterial hypertension with outpatient techniques, as recommended today, in addition to monitoring the degree of control acquired with antihypertensive treatment.

3.1.4. Aragon

The Health Ministry of Aragon has launched the most updated Health Plan. There is no specific health promotion or primary prevention program on Stroke in Aragon at the population level. However, a recent update of the Stroke Plan of Aragon (2019-2022), in line with the European Stroke Organization Action Plan 2018-2030, include described primary prevention of risk factors for cardiovascular disease, included at the Primary Care level (Hypertension, Dyslipidaemia, Diabetes, Atrial Fibrillation, etc.):

https://www.aragon.es/documents/20127/674325/Programa_ictus_actualizacion2019.pdf/f164a068-544a-0248-af0d-ca2a2f7c5624

On the other hand, within the Plan Health 2030 (DGSP) action lines were collected on health determinants (cardiovascular, among others) but not specific to Stroke.

<https://www.aragon.es/-/plan-de-salud-de-aragon-2030>

With Public Health the strategy against smoking is also worked at the population level.

<https://www.aragon.es/-/dejar-de-fumar-2> .On this website of the department are explained the resources that the community has provided for information on tobacco. There is also a public health blog with information. <http://aragonsinhumo.blogspot.com/>

From Public Health Department. the promotion and prevention section works on the following aspects against tobacco: <https://www.aragon.es/-/tabaco-4>

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- World No Tobacco Day 2019
- Signaling signs for devices (alcohol and tobacco)
- Guides and resources to stop smoking
- Tobacco Law
- Smoking prevention
- Tobacco regulations, devices, pipes, other related products and an herbal base
- Links about tobacco and smoking
- Ideas Competition: "PREVENTION APP"
- Publications related to tobacco

In addition, a network of smoking cessation consultations has been created from the general health care department in primary health care centers, after having accredited training to professionals, there are smoking cessation consultations in 30% of the centers of health. Since January 1, Aragon has implemented the approach to smoking cessation treatments that are supported since January 2020 by the public health system.

3.1.5. Navarre

As part of the Health Plan for Navarre 2014-2020, the health promotion strategies are focused on self-management and healthy environment.

http://www.navarra.es/home_es/Temas/Portal+de+la+Salud/Ciudadania/Nuevo+Modelo+asistencial/Plan+Salud+Navarra/Plan+de+Salud+de+Navarra+2014-2020.htm

The specific programs in Navarre Health Plan 2014-2020 are:

- Health promotion for children and youth and adults programs (community and individualized approach)
- Vascular disease prevention and care program (including primary prevention, as a part of interest for this deliverable)

As part of the Health promotion for children and youth program, there are specific interventions lead either by Primary care professionals (systematic assessment of healthy nutrition and obesity prevention program) and other stakeholders part of the community (Promotion of the Network

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of Health Promoting Schools, Exercise in school and obesity prevention, Interdepartmental alliances and with municipal entities for the improvement of the environments, Positive health and self-care and lifestyles, Hospitals Health Promoters- children friendly.

The Department of Health has built a specific portal web (SaludNavarra), with different interfaces (Citizens, Professionals, Corporations), to provide information regarding healthy lifestyle campaigns and tips for individuals.

The specific site for Citizens includes different tabs, such as “Me cuido”, where people can find information sheets regarding healthy nutrition and healthy rides through the Complejo Hospitalario de Navarra based on the Japanese ancestral tradition Shinrin-Yoku (Forest bathing). The tab for Professionals includes information of the Health Plan for Navarre 2014-2020. This Plan is divided into different strategies/programs, including one for vascular diseases and diabetes.

3.1.6. Catalonia

In Catalonia an Integral Plan for the promotion of health through physical activity and healthy eating, known as PAAS, was prepared by the Ministry of Health in response to the increase observed in the prevalence of obesity, according to the World Strategy of the World Health Organization and the NAOS Strategy (Nutrition, Physical Activity and Prevention of Obesity) of the Spanish Agency for Consumer, Food Safety and Nutrition.

http://salutpublica.gencat.cat/ca/sobre_lagencia/Plans-estrategics/PAAS/Presentacio-del-PAAS/

This program depends of the Health Department of the Catalan Government and is leaded for the Catalan Health Agenc

Specific indicators are published periodically

http://salutpublica.gencat.cat/web/.content/minisite/aspcat/sobre_lagencia/Plans_estrategics/PAAS/indicadors_paas/INFOGRAFIA-2019.pdf. and specific programes are developed related to the phisical activity

http://salutpublica.gencat.cat/ca/ambits/promocio_salut/activitat_fisica/ or to the healthy foods

http://salutpublica.gencat.cat/ca/ambits/promocio_salut/alimentacio_saludable/

Legislation about this programe is also provided

http://salutpublica.gencat.cat/ca/sobre_lagencia/Plans-estrategics/PAAS/Impacte-legislatiu/

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3.2. Do they have specific programs to address primary prevention in Stroke?/Is there any specific section for evaluation?

3.2.1. Northern region of Portugal

According to the **Portuguese National Cerebro-cardiovascular Programme 2017** (Programa Nacional para as Doenças Cérebro-Cardiovasculares), the strategies/programmes to address primary prevention of Stroke until 2020 are in articulation with the National Program for the Promotion of Food Healthy and the Ministry of Education (for targeting young people), with the aim of reducing salt intake in the feeding with a multilevel approach (administration -education- healthcare). Although one of the main objectives is to improve control at the Primary Health Care level of Hypertension, there are no other programmes/strategies/campaigns detailed neither for atrial fibrillation considered in the Programa Nacional para as Doenças Cérebro-Cardiovasculares .

<https://www.dgs.pt/paginas-de-sistema/saude-de-a-a-z/programa-nacional-para-as-doencas-cerebro-cardiovasculares/orientacoes-programaticas.aspx>,

In the annual report of the Portuguese **National Cerebro-cardiovascular Programme 2017** we can find information regarding output indicators, mainly concerning mortality, hypertension and atrial fibrillation (anticoagulation) therapy and reperfusion therapies.

Both regional plans (i.e. regional health plan and ARSN strategic plan; http://www.arsnorte.min-saude.pt/wp-content/uploads/sites/3/2018/01/Plano_Estrategico_ARSN_2017-2019.pdf; http://www.arsnorte.min-saude.pt/wp-content/uploads/sites/3/2019/10/PlanoRegionalSaudeNorte_2014_2016.pdf) include specific goals for stroke health determinants, including hypertension, tobacco and alcohol consumption, obesity or physical inactivity, and both have a specific section for monitoring and evaluation.

3.2.2. Occitane

The Occitane Stroke program is part of the **Plan d'actions national « accidents vasculaires cérébraux 2010-2014** from the French Ministry of Health:

https://www.cnsa.fr/documentation/plan_actions_avc_-_17avr2010.pdf

The goals are to implement support channels and adapted information systems; providing

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information, training and reflection for professionals; promote research and ensure demographic balances.

In 2013 a group of experts of the Haute Conseil de Santé Publique elaborated the rapport: *Proposals for impact assessment of the National Action Plan Stroke 2010-2014*. This rapport describes targets and indicators. In spite of this rapport there's no a final evaluation rapport regarding the Plan d'actions national « accidents vasculaires cérébraux 2010-2014.

file:///C:/Users/Usuari/Downloads/hcspr20130313_planavcaidemethodo.pdf

3.2.3. Balearic Island

This region has the ***Stroke's Strategy of the Balearic Islands 2017-2021***. The main objective is to reduce the incidence of stroke in the Balearic Islands. The objectives to be developed are: early identification of people with a suspected stroke; treat the acute phase; undertake comprehensive treatment including rehabilitation of sequelae and social reintegration; develop the rights of people who have suffered a stroke; promoting continuing education and research in this area. All this through quality of care standards that will improve the quality of life of the affected people and their families.

<file:///C:/Users/Usuari/Downloads/estrategia-ictus-cat.pdf>

The document contemplates an evaluation plan to be done after 2021 based in the indicators of the Strategy of the National Health System and complemented with their own indicators which are:

- Evaluate the indicators of the Stroke Strategy of the NHS in the terms proposed by the Ministry of Health, Social Services and Equality.
 - Create a working group that defines its own indicators that complement the assessment of the NHS Strategy.
 - The evaluation of the stroke strategy of the Balearic Islands must be carried out before the end of the validity period.

3.2.4. Aragon

There is no specific health promotion or primary prevention program on Stroke in Aragon at the population level. However, a recent update of the ***Stroke Plan of Aragon (2019-2022)***, known as PAIA, in line with the European Stroke Organization Action Plan 2018-2030, include described primary prevention of risk factors for cardiovascular disease, included at the Primary Care level (Hypertension, Dyslipidemia, Diabetes, Atrial Fibrillation, etc.).

https://www.aragon.es/documents/20127/674325/Programa_Ictus_actualizacion2019.pdf/f164

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[a068-544a-0248-af0d-ca2a2f7c5624](https://doi.org/10.1007/978-94-007-5444-0_248)

The PAIA Plan has an evaluation chapter including the main objectives which are: the development of a scorecard with the key indicators that are extracted from the HCE and other sources of data (PCH, RISS, HISS, CMBD) through a Business Intelligence tool (BI), to be able to obtain prospectively and updated the main monitoring data.

3.2.5. Navarre

There's no specific primary prevention program focused on Stroke in Navarre. Stroke is included in vascular diseases chapter of the Navarre Health Plan 2014-2020. The Plan has a specific chapter for follow-up and assessment (2020), including indicators in line with those proposed in the Evaluation framework (see D 3.1).

3.2.6. Catalonia

The **Action Plan for Vascular Diseases 2017-2019** by the PDMAC - Pla Director de Malalties de l'Àparell Circulatori- aims to improve the attention to circulatory system diseases in Catalonia by rearranging resources and actions to promote health, disease prevention, early diagnosis, adequate treatment and rehabilitation, from a territorial perspective, of social condition and of equitable and sustainable gender, in order to reduce its impact on the health of the population.

http://salutweb.gencat.cat/web/.content/_ambits-actuacio/Linies-dactuacio/Estrategies-de-salut/Aparell-circulatori/Documentacio/pdmac_2017_2019.pdf

Stroke Program deals with the stroke issues of the PDMAC. The Action Plan 2016-2020 evaluates the degree of fulfillment of the actions proposed by each of the areas in order to identify the weaknesses, design improvement actions, correct the process of implementing the actions and act as benchmarking to facilitate the extension of successful experiences. Monitoring the operation plan, the proposed activities, evaluation of the specific objectives set, in terms of the quality of the care provided and the clinical results, achieved evaluation of the results and the final impact of the proposed actions on the mortality and the people's state of health 2016-2020 and also evaluation of health indicators and reduction of inequalities established in the Health Plan of Catalonia 2016-2020.

Stroke Program is a comprehensive program that deals with the different steps of stroke: prevention, acute phase, rehabilitation and return to the community. Regarding prevention, the Stroke Program works together with the Public Health Agency of Catalonia *see 3.3.6* and specific actions regarding AF has been undertaken. An *AF pathway* has been launched in 2017, and the goal is to detect the unknown people with arritmia and act

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consequently. Some actions has been undertaken with the Catalan Society of hypertension oriented to highlight the importance of HTA in stroke

3.3. Which is the approach of the objectives regarding healthy lifestyle campaigns? (Is this general or do they consider the characteristics of the region)

3.3.1. Northern region of Portugal

The results of the campaign “Conheça a sua pulsação (Know your pulse)” reported were structural (2017) (number of events in hospitals and general clinics and in more than 60 pharmacies and in homes for the elderly), but no information regarding output indicators were given.

3.3.2. Occitain

From a National perspective, the Comité Français de *Lute contre l’hypertension artérielle*, alongside the Fédération Française de Cardiologie and the Société Française d’Hypertension Artérielle, has launched several campaigns to raise awareness the effects of hypertension and to promote self-measurement. As a novelty, in 2017, the Protection Sociale Des Boulangers launched a campaign against high blood pressure, initiated in partnership with the Foundation for Research on Hypertension (FRHTA).

There is also a French branch of the AFA (<http://www.heartrhythmalliance.org/afa/fr/quest-ce-que-la-fibrillation-auriculaire>), with the same campaigns as mentioned before (subsection 3.1.1) translated into French.

The PROFIL FA campaign, conducted by general practitioners sensitized to stroke risk factors, developed in 2013 with the institutional support of Boehringer Ingelheim, was part of the 2010-2014 Stroke National Plan. Its goal was to reduce the risk of stroke by managing AF. There are no results available regarding the assessment of the campaign.

3.3.3. Balearic Island

The International Society of Hypertension and the World Hypertension League launched the May Measurement Month (MMM 2018) campaign, with the aim of measuring the blood pressure during the month of May to the largest possible number of people over 18, mainly to all those who have not measured the blood pressure (BP) in the last year. In Spain, this project is led by the Spanish Society of Family and Community Pharmacy (SEFAC) with the collaboration of

several pharmacist colleges. So far, the project has the participation of more than 800 pharmacists who have registered more than 1,100 cases. In the last year edition, 190 pharmacists participated and at the end of the campaign more than 3,300 cases were registered, of which 25% had high blood pressure. In this project, in addition to measuring BP, pharmacists offer practical information on the prevention and control of hypertension, as well as healthy lifestyle habits. SEFAC has been working for years to improve the preparation of community pharmacists through the impacHta program, developed with the collaboration of the Spanish Society of Hypertension-Spanish League for the fight against arterial hypertension (SEH-LELHA). This program, in which more than 1,700 community pharmacists from all over Spain are enrolled, trains community pharmacists who overcome their different phases (theoretical, practical and case registration) for the provision of BP measurement and control services and the calculation of vascular risk.

Alcohol campaigns are mainly targeted to the youth, as the recent one "We can not keep looking elsewhere" ("No podem seguir mirant a un altre costat") <http://www.alcohol-info.es/cat/home>. In 2018, as part of the World No Alcohol Day, the Primary Care Management of Mallorca and the General Directorate of Public Health and Participation, through the PADIB, a day to raise awareness in the population on the consumption of this substance.

SEFAC led in Spain the Know your pulse campaign (AFA), which started in November 2018 and it is already finished. There is not results of the assessment of this campaign yet. To our knowledge, there were no specific campaigns in Balearic Islands.

3.3.4. Aragon

From the Stroke Action Plan of Aragon they are collaborating with the School of Health of Aragon (<https://www.saludinforma.es/portalsi/web/escuela-de-salud>) in the elaboration of materials and in the participation as teachers in a course for training Expert Patients "Gánale Vida al Ictus".

AIDA, it's Aragon Stroke Association, develops, prevention, awareness and rehabilitation campaigns. Not specific information founded in AIDA's website.

https://es-es.facebook.com/pg/ictusdearagon/events/?ref=page_internal

The Aragonese Health Plan emphasizes the approach to lifestyles in Aragonese health, with the motto "Health in all policies"

The life expectancy of the Aragon is one of the highest in the world: 86 years for women and 80 for men, but it also has its least favorable aspects:

- Aging: 21% of the population is 65 years of age or older.

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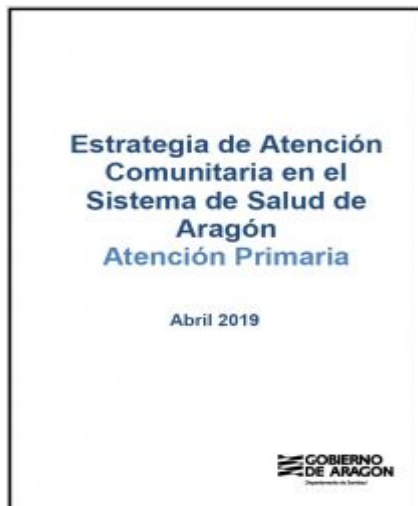
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- Geographic dispersion: a large part of the territory is very sparsely populated and it is necessary for this population to access the resources it needs.
 - The poverty risk rate reaches 16% of the inhabitants.
- An important part of the population has lifestyles with negative consequences for health:
- 6.4% of Aragonese people do not usually have breakfast, twice as much as in the rest of the country.
 - 45% of adults do not practice exercise, a percentage that rises to 50% in women.
 - 27.3% of adults smoke regularly, and it rises to 32.4% in men.

The health plan establishes 4 priority lines of action

- 1) Health in all policies.
- 2) Health at all stages of life.
- 3) Orientation of the Health System towards people.
- 4) Information, research and training for Health



Another line of work is the "Community Care Strategy". It is an initiative of the Department of Health aimed to promote and improve the health and well-being of people in Aragón. In Primary Care, the Community Care Service includes actions on the health problems and needs of the population of each area and the attention to their inequalities. Through Community activities, the participation and capacity of people and groups to address their own problems is enhanced

This has led to the detection and registration of community assets. The asset maps, through their participatory development, are a useful tool to promote the empowerment of the population in their health and increase awareness of the health resources available in the environment, helping to create a positive approach to health and increase relationship between

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health professionals, social and neighbors of a community. The link to the blog of community assets is <https://atencioncomunitaria.aragon.es/sample-page/>

3.3.5. Navarre

Regarding campaigns, on the one hand, Navarre's Ministry of Health has worked on the dissemination of all codes in general, not only the stroke code, both professionals and the population, and this is a program with different actions that is contemplated in the Health Plan in the Time-dependent Emergency Strategy.

In relation to the population campaigns, Navarre's Ministry of Health collaborates with an NGO of the "ABC that saves lives" and through it different campaigns and actions are carried out. The most notable in relation to the Stroke Code (also for the other codes), are:

1. Information to the population has been done through short and simple messages of "how to recognize stroke", in the bags of sugar used in coffee shops (also in the Hospital de Navarra) in a short time period. It is also planned to disseminate the information by putting it in the milk boxes.

2. Campaign on stroke day. The professionals of the Hospital Complex of Navarra (CHN), every year organize on the day of the stroke an informative campaign to the population and diverse activities (taking of TA and pulse, doppler ...). Specifically, in 2017, it was intended to disseminate and posters were prepared on how to recognize the stroke that was distributed by all Health Centers (Hospitals, Health Centers ...) of Navarra. From this dissemination activity in which the ISPLN was also involved, I can pass on more information and details.

The Institute of Public Health of Navarre is in charge of the Stroke prevention and awareness campaigns. In 2016 an edition of a brochure and an informative poster, in Basque and Spanish, focused on Stroke was made, the target was general population and the objectives were the identification of the signs-symptoms of stroke and inform of the importance of calling 112 right away.

Within the framework of education in self-care of vascular diseases, the Institute of Public Health of Navarre has developed with Primary care and Heart diseases area the following campaigns:

- o Materials: Educational protocol and community interventions. Educational styles, Brief educational guide (for primary care) and Lifestyles, Brief educational guide (for hospitals)
- o Self-care training

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o Vascular Diseases, Information (trptych) and Vascular Diseases, Self-Care Manual (booklet 35 pages)...

o An adaptation of the Manual for the Navarra health page:

https://www.navarra.es/home_es/Temas/Portal+de+la+Salud/Ciudadania/Mi+enfermedad/Enfermedades+vasculares/

o School of patients:

http://www.navarra.es/home_es/Temas/Portal+de+la+Salud/Ciudadania/Escuela+de+Salud/Escuela+de+P+Patients/

Non specific information about evaluation or indicators based on the campaigns founded.

3.3.6. Catalonia

The Public Health Agency of Catalonia is in charge of campaigns regarding healthy lifestyles, tobacco, alcohol and drugs. They launch campaigns periodically regarding healthy lifestyles. These are a local actions, only in Catalunya, taking into account the special characteristics of local population, and specifically in any case regarding the topic (different targets in childhood obesity, smokers, alcohol consumers) or the age (approach to the healthy lifestyle is different in young or older people)

http://canalsalut.gencat.cat/ca/actualitat/campanyes/alimentacio_saludable/Campanya-habits-saludables , alcohol, <http://canalsalut.gencat.cat/ca/salut-a-z/a/alcohol>, obesity <http://canalsalut.gencat.cat/ca/detalls/article/Dia-Mundial-de-IObesitat>

or tobacco <http://canalsalut.gencat.cat/ca/detalls/article/Tabac-00003>
<http://canalsalut.gencat.cat/ca/vida-saludable/empresa-promotora-salut/els-programes/consum-de-toxics/programes-empresa-sense-fum/>

The last campaign related to this topic is running on in collaboration with The Ricky Rubio Foundation, as a new youth anti-smoking campaign, starring NBA player Ricky Rubio. <https://web.gencat.cat/es/actualitat/detall/Aguanta>

4. RESULTS OF STROKE AWARENESS CAMPAIGNS

4.1. Results from Northern Region of Portugal

The most recent campaign launched in Portugal for stroke awareness was in 2015, under the motto “Viva mais, não arrisque. Eu não arrisco”. It was promoted by the Portuguese Stroke Society (Sociedade Portuguesa do Acidente Vascular Cerebral, SPAVC), with a video in the vimeo platform <https://vimeo.com/140960752> with more than 2,000 viewers (last update July 22 2019).

In 2017, the SPAVC launched a video in youtube <https://www.youtube.com/watch?v=mYHd82qWH20&feature=youtu.be> about stroke, in particular the warning signs (3Fs), risk factors and preventive measures, produced in the context of National Day of people with stroke, annually marked in Portugal on **March 31**. The video has reached 2,588 viewers (last update July 22 2019).

However, there were no evaluation of the campaigns to assess their impact

The Portuguese National Cerebro-cardiovascular Programme and the ARS Norte also deliver information to the general population through the websites and the social networks, as well as intervention in television programs, mainly around the National Stroke survival day (31 March) and the World Stroke Day (29 October). In addition, individual hospitals, the Portuguese Stroke Society and the stroke support association Portugal AVC often deliver information to the population. Nevertheless, the results of these several actions have not been monitored.

4.2. Results from Occitane

From a national perspective, there has been several awareness campaigns every year coinciding with the international Stroke Day (<https://www.accidentvasculairecerebral.fr/>), being the last one in 2018, promoted alongside the Société Française Neuro-vasculaire, with the motto “L’AVC nous sommes tous concernés”. There is no information regarding the assessment of those campaigns.

AVC tous concernés (<http://www.jemarche-avc.fr/>) is a national French stroke association that is committed to a 2019 - 2022 multi-year action: "the AVC minibus on the roads of the regions of France - prevention of strokes to vacationers on the beaches of 4 islands", with the CNM Santé Mutual Mecanism. The first installment, 2019, is taking place precisely in Occitanie ("prevention in ski resorts", Figure 7).

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Figure 7. Poster of the AVC Tous concernees in ski resorts, Occitanie 2019.

4.3. Results from Balearic Islands

Every year, coinciding with the international Stroke Day, a campaign is launched in Mallorca. This past March, 2019, MAPFRE Foundation, The Spanish Society of Neurology and Freno al Ictus with the support of the Balearic Government, the Palma Council, the Balearic Society of Neurology and the patients’s organization RHACER, presented the campaign “Stroke: avoid, learn and act”, to sensitize the general population about Stroke. MAPFRE placed a tent for two days in the Plaça Major were information regarding how to prevent, detect and act when a person has a stroke. There is not results of a formal assessment of this campaign.

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4.4. Results from Navarre

A campaign coordinated by the Association “The ABC THAT SAVES LIVES”, as part of the Citizen Training Program for Vital Urgency and of the Time-Dependent Emergency Strategy (which is one of the 12 key strategies of the Health Plan of Navarra 2014-2010) was launched in 2017. Its design and implementation required the collaboration of medical experts in the vital emergency and Navarre restoration and distribution companies.

In 2018, the Association of Brain Injury of Navarra (ADACEN) and Mutua Navarra launched a novel campaign to detect and prevent stroke in companies (posters, infographics and videos). The initiative was developed in a first phase throughout 2018 and that had the collaboration of the General Directorate of Economic and Business Policy and Labor of the Government of Navarra (<https://www.adacen.org/adacen-y-mutua-navarra-impulsan-una-campana-de-deteccion-y-prevencion-del-ictus-en-la-empresa/>).

4.5. Results from Aragon

Over the last five years, The Stroke Foundation of Aragon (AIDA), as part of their acts of dissemination and awareness of Stroke, has launched awareness campaigns that consist on handing out brochures and journals with information about the disease during the International Stroke Day in different hospitals besides organizing events such as tent placement with information points. These acts are coordinated with other entities (Spanish Federation of Stroke, Spanish Society of Neurology, MAPFRE Foundation, Freno al Ictus). These campaigns have had different themes and slogans (i.e. “Take out the superhero you have inside”, “Stroke: prevent, learn, act”, “Run: every minute counts”).

An awareness campaign was carried out, supported by the Department of Health in 2019 with videos and posters, and a day for the presentation was made
<https://www.youtube.com/watch?v=LpseMvQPt8>



Jornada: Gánale vida al ictus

PROGRAMA

10:30-11:00:00. Presentación Campaña "Gánale vida al ICTUS".
 Pablo Martínez. Director General. Dirección General de Derechos y Garantías de los Usuarios (DGDGU). Departamento de Sanidad.
 Javier Marta. Coordinador del Plan Autonómico del Ictus. Hospital Universitario Miguel Servet.
 María del Carmen Martín. Asociación Ictus Aragón (AIDA)

11:00-12:00. La enfermedad neurovascular desde la perspectiva de género.
 Ana Morales Ortiz. Coordinadora del Plan Regional del Ictus. Hospital Virgen de la Arrixaca de Murcia.
 Presenta: María Luisa Aliaga. Asesor técnico. DGDGU

12:00-12:30: Café

13:00-14:30. Mesa redonda: Las escuelas de pacientes y la enfermedad neurovascular.
 Elena Muñoz. Neuróloga. Servicio Neurología. Hospital Clínico Universitario. Zaragoza.
 Belén Pardillos. Terapeuta ocupacional. Asociación Ictus Aragón (AIDA).
 Estibaliz Gamboa Moreno. Responsable del Programa Paciente Activo. Osakidetza.
 Modera: Carlos Carreter. Asesor técnico. DGDGU

INSCRIPCIONES: bit.ly/2Inu8EX o a través de saludinforma.es

4.6. Results from Catalonia

The Catalan Stroke Foundation (Fundació Ictus) launch periodically stroke awareness campaigns since 2009. In 2010 the exhibition "Que tens al cap" runs throughout 15 to the most important cities of Catalonia <https://www.youtube.com/watch?v=1Qc92eB6BKc> with more than 15.000 visitors. The outcomes regarding if the visitors remembered the messages 3 months later, were assessed in 2 cities

In 2011, Fundació Ictus launch, alongside the Stroke Programme of Catalonia the second campaign of RAPID (as the FAST campaign in UK-US) <http://www.elpuntavui.cat/article/469346-un-de-cada-cinc-infarts-cerebrals-apareix-abans-dels-65-anys.html>. FAST actions after stroke were launched periodically and the last campaign in 2018/19 was addressed to the children in collaboration with Angels Initiative <http://www.escolabarrufet.cat/10258-2/>. Related also to the children, a campaign involving schools was launched in 2016, through an interactive video game with monitors and teachers <https://govern.cat/salaprensa/notes-premsa/297706/govern-posa-marxa-campanya-educativa-alumnes-aprenquin-actuar-davant-un-ictus>

Other approaches have been done, related to Atrial Fibrillation with the campaign Pren-te el

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pols Take the pulse, involving pharmacies and covering an area of more than 2 million people
<http://canalsalut.gencat.cat/ca/actualitat/campanyes/campanya-pren-te-el-pols/>. In this case, the outcomes were assessed

Regarding disability, an action “Que ets capaç de fer” what are you able to do was performed in 2015 <https://www.youtube.com/watch?v=KaqOHWrDgM0>. This action highlights the remaining capacities versus lost capacities through different activities.

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5. Are these Healthy Programs and Awareness Campaigns aligned with the indicators proposed in the IctusNet evaluation framework (D.3.1)? / Tables with targets and indicators by region.

The IctusNet framework D3.1 indicators includes the strategies, targets and indicators based on the Action Plan for Stroke in Europe 2018- 2030 (European Stroke Organisation, ESO), the Burden of Stroke in Europe report (Stroke Alliance for Europe, SAFE) and the Global Action Plan for the prevention and control of non-communicable diseases 20-13-2020 report (World Health Organisation, WHO).

The six regions answers are grouped in three different tables:

- 5.1 Healthy lifestyle programs and documents available by region
- 5.2 Are Stroke Programs available? Are they focused on primary prevention? Do they have any kind of evaluation?
- 5.3 Last Stroke Awareness Campaign by region

Regarding the information included in the tables, it is important to highlight that in case of absence, it only means that the information has not been reported by the region or we could not found it, this does not mean that it does not exist.

5.1 Healthy lifestyle programs and documents available by region

In relation to question 3.1, the answers and references are summarised in table 5.1. In relation to structural indicators, most regions have programs in all areas of healthy lifestyle and there is some kind of reference that proves it. No outcome indicators have been reported.

	ALCOHOL INTAKE		DIET		PHYSICAL ACTIVITY		TOBACCO	
	Prog	Docs	Prog	Docs	Prog	Docs	Prog	Docs
North Portugal	?	?	√	√	√	√	√	√
Occitanie	√	?	√	√	√	√	√	?
Balear Islands	√	√	√	√	√	√	√	√
Aragon	√	√	√	√	√	√	√	√
Navarre	?	?	√	√	√	√	√	√
Catalonia	?	?	√	√	√	√	√	√

Prog: Program / Docs: Documents / ?: Not founded / √: Information available.

TABLE 5.1

5.2 Are Stroke Programs available? Are they focused on primary prevention? Do they have any kind of evaluation?

We have grouped the answers to questions 3.2 and 3.3 in Table 5.2. In this table is described whether or not stroke programs exist and their scope, if there are related actions with hypertension and atrial fibrillation, if there is any type of indicator and it has been performed some kind of evaluation.

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	Stroke programs		HTA	FA	Indicators	Evaluation
	Available	Ambit				
North Portugal	Stroke	National	√	√	√	√
Occitanie	Stroke	National	√	√	√	√
Balear Islands	Stroke	Local	√	?	?	?
Aragon	Stroke	Local	Planned	Planned	planned	Planned
Navarre	Vascular	Local	?	√	√	Planned
Catalonia	Stroke	Local	Global	√	NO	NO

TABLE 5.2

5.3 Awareness campaigns

This table describes the Stroke Campaigns. We have included only the campaigns with the following characteristics: Those made in the last two years, tool used, awareness of Stroke given, number of campaigns or activities done and whether if it existed some kind of evaluation.

	Date	Tool	Item	Number	Evaluation
North Portugal	2019	Video	F.A.S.T.	Stroke Day	No
Occitanie	2018-19	Bus	F.A.S.T.	Always	?
Balear Islands	2019	Tent	ICTUS	2 days	No
Aragon	2019	Tent	F.A.S.T.	Stroke Day	No
Navarre	2018	Enterprise	ICTUS Total	Limited	?
Catalonia	2018	Show	RAPID	Stroke Day	No

TABLE 5.3

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6. COMMENTS

The improvement of healthy lifestyle habits depends in each region of different institutions, in some of them of national scope, which is why the control and the evaluation depend on this information. These types of campaigns almost never do reference to Stroke because of poor control of healthy lifestyle habits. We have not found concrete references if the population makes a relation between smoking and excessive alcohol consumption with lung or liver diseases. In fact, there is a perception that physical activity and healthy diet mainly benefit cardiovascular diseases. In any case, there is no perception or about the risk of stroke related with non compliance of these habits.

Regarding healthy diet and physical exercise there are multiple social initiatives that stimulate their follow-up, regardless of institutional programs. Smoking restrictive measures in most countries are implemented, and it has influenced the decrease in their consumption. The impact of alcohol intake is different depending on each region; most of the campaigns focused on young people.

The detection and fight against hypertension is divided between government initiatives and local initiatives of entities related to Stroke. Even though hypertension is the main risk factor of Stroke, there is a lack of campaigns carried out, a lack of detection, and a high level of abandonment of the medication.

Atrial fibrillation, on the other hand, is related with local initiatives, which in the recent years have been highlighted by the emergence of new anticoagulant drugs and initially promoted by pharmaceutical companies, although they are currently consolidating detection campaigns related to atrial fibrillation, due to awareness of its importance in Stroke prevention.

Stroke programs are strongly implemented in all regions of IctusNet. In the case of the Balearic Islands and Aragon, although the Spanish Strategy of Stroke initially promoted them, they have now regional autonomy. The stroke in Navarra is included in a vascular disease program and Porto and Occitanie have local implementations of national stroke programs. All IctusNet regions are active in campaigns about the Stroke Patient Associations and Stroke Foundations are all involved. Stroke Patient Associations are mainly composed by Stroke patients and their families, except in Navarra and the Balearic Islands where other brain pathologies are admitted. Most of these types of campaigns are of short duration, centred on Stroke Day and focused on general Stroke awareness. We have not found any evaluation about the impacts of these campaigns.

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7. CONCLUSIONS

- All IctusNet regions have activities related to healthy lifestyles, about risk factors and stroke campaigns that would respond to the structural indicators defined in the Ictusnet evaluation framework (D.3.1) although it is difficult to have an exact number of them. No outcome indicators are found although they exist in a timely manner.
- All IctusNet regions have activities related to hypertension that respond in part to the structural indicators defined in the Ictusnet evaluation framework (D.3.1). No outcome indicators are found although they exist in a timely manner.
- All IctusNet regions have activities related to atrial fibrillation, all of them linked and driven by stroke plans that would respond in part to the structural indicators defined in the Ictusnet evaluation framework (D.3.1). We have not been able to find outcome indicators although there are in a punctual way
- All IctusNet regions carry out campaigns on stroke although they are very punctual, in a short-time format and most centred in the Stroke Day. All partners find it insufficient

8./ RECOMMENDATIONS

These recommendations are performed in order to establish the main questions and goals for IctusNet regions oriented to take into account for the next steps toward WP4 Knowledge transfer to health policies and WP5 Knowledge exchange, collaboration and mutual learning. There are three types of recommendation based on the topics: Healthy lifestyle habits, Stroke risk factors and Stroke awareness campaigns.

In relation to healthy lifestyle habits, regional administrations should be asked regarding the following items:

- The effort to systematically obtain and facilitate the indicators of results proposed and that are in line with those suggested (WHO, NCD, SAP).
- To include the risk of stroke in population campaigns that are promoted.
- Work together with the professionals involved and with the patient's associations to obtain indicators, campaign assessment and evaluation of outcomes and their impact.

Regarding the risk factors: hypertension and atrial fibrillation

- Greater effort should be done against hypertension, as the most important risk factor in the occurrence of stroke, with the same recommendations of healthy lifestyle habits.
- To carry out campaigns on the detection of hypertension in the population at risk
- To give support to the campaigns about the control and adherence to medication and risk of abandonment in patients with hypertension
- To publicize the importance of atrial fibrillation and previous detection to prevent Stroke

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- To enhance screenings for detection of atrial fibrillation in the population at risk
- To give support to the arrhythmia control campaigns through the pulse in close connection with primary care services and pharmacists

In relation to Stroke awareness campaigns

- Stakeholders and Health Ministries should be involved in these campaigns.
- To increase the number of campaigns focused in different aspects of the disease.
- The results of the campaigns and the evaluations of the results and impacts need to be published

All the comments, conclusions and recommendations will be take into account to support the preparation of Toolkit to be developed in GT5, that will help to improve the deficiencies detected in this paper D.3.2. The toolkit that will be developed, will focus on how to raise campaigns, enhancing mutual learning and common actions in the IctusNet territory

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